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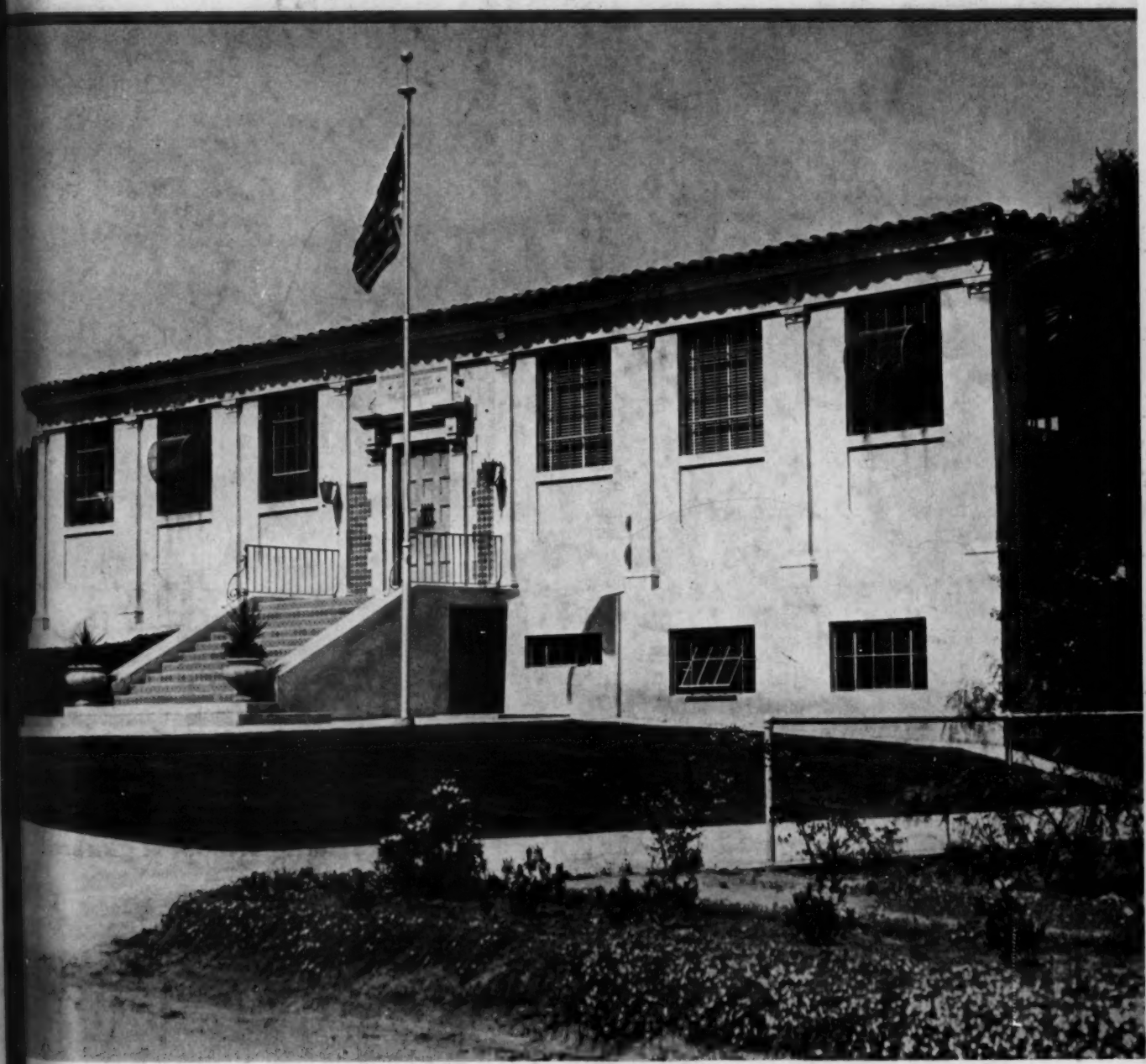
The Journal of the Fire Protection Profession Since 1877

Vol. 85, No. 10 OCTOBER, 1932 Member A.B.C.-A.B.P.



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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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Let's All Go to San Diego

THE annual convention of the I.A.F.C., to be held at San Diego October 18-21, will unquestionably be attended by every fire chief. If not in body, they'll certainly all be there in spirit.

● As never before, the fire service today is confronted with many vital problems that are crying for solution. All eyes are being eagerly turned to this convention for some constructive action.

● If you can't find a way of getting to San Diego, don't worry about it. You can count on your good old friend FIRE ENGINEERING to bring you the whole story. Two members of our staff, Fred Shepperd and I. H. Case, will be there to see to it that you don't miss anything. Watch for the next issue.

The Publishers

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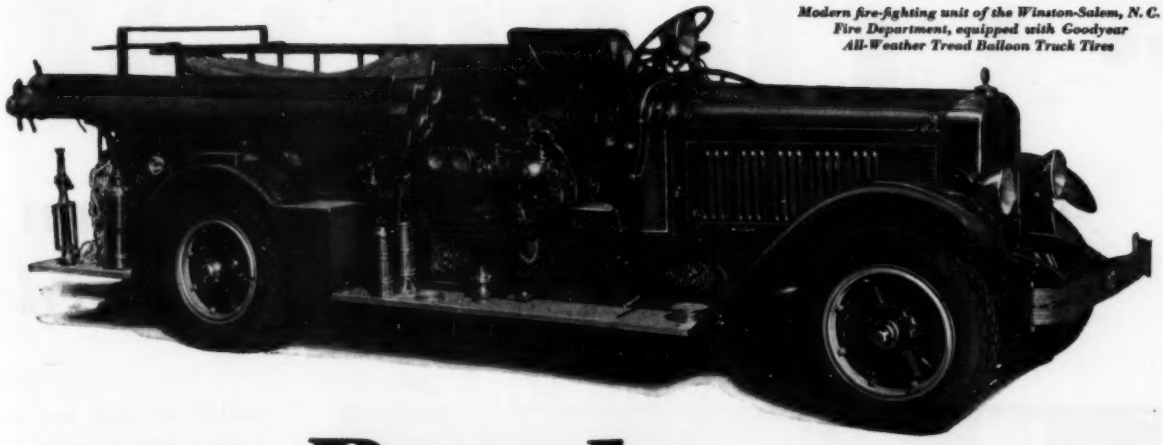

Modern fire-fighting unit of the Winston-Salem, N. C. Fire Department, equipped with Goodyear All-Weather Tread Balloon Truck Tires

ALWAYS *Ready* ON GOODYEAR ALL-WEATHERS

Extra valuable, too, are the advantages of Goodyear K-Rims — noted for their ease of operation, with open valve stem slot and split base; for their safety in service; and for their interchangeable mounting

IT'S a great satisfaction to any Fire Department, and to the community it serves, to know that its fire-fighting apparatus is equipped with tires that are always ready—always free from trouble:

Goodyear All-Weather Tread Balloons

The staunch design and construction of Goodyears supply the best tire guaranty of get-there-fast action.

The world-famous All-Weather Tread with its big thick sharp-edged blocks provides powerful go-ahead traction in any going, powerful slipless holding on curves and grades.

The rugged body of extra-elastic, extra-durable Supertwist Cord insures long, economical life with a record in many a Department the country over for maximum freedom from trouble.

See your nearest Goodyear Truck Tire Service Station Dealer for complete information about types and sizes —or write to the Government Sales Department, Goodyear, Akron, Ohio, or Los Angeles, California.

TUNE IN: Goodyear invites you to hear the Revelers Quartet, Goodyear Concert-Dance Orchestra and a feature guest artist every Wednesday night, over N.B.C. Red Network, WEAF and Associated Stations

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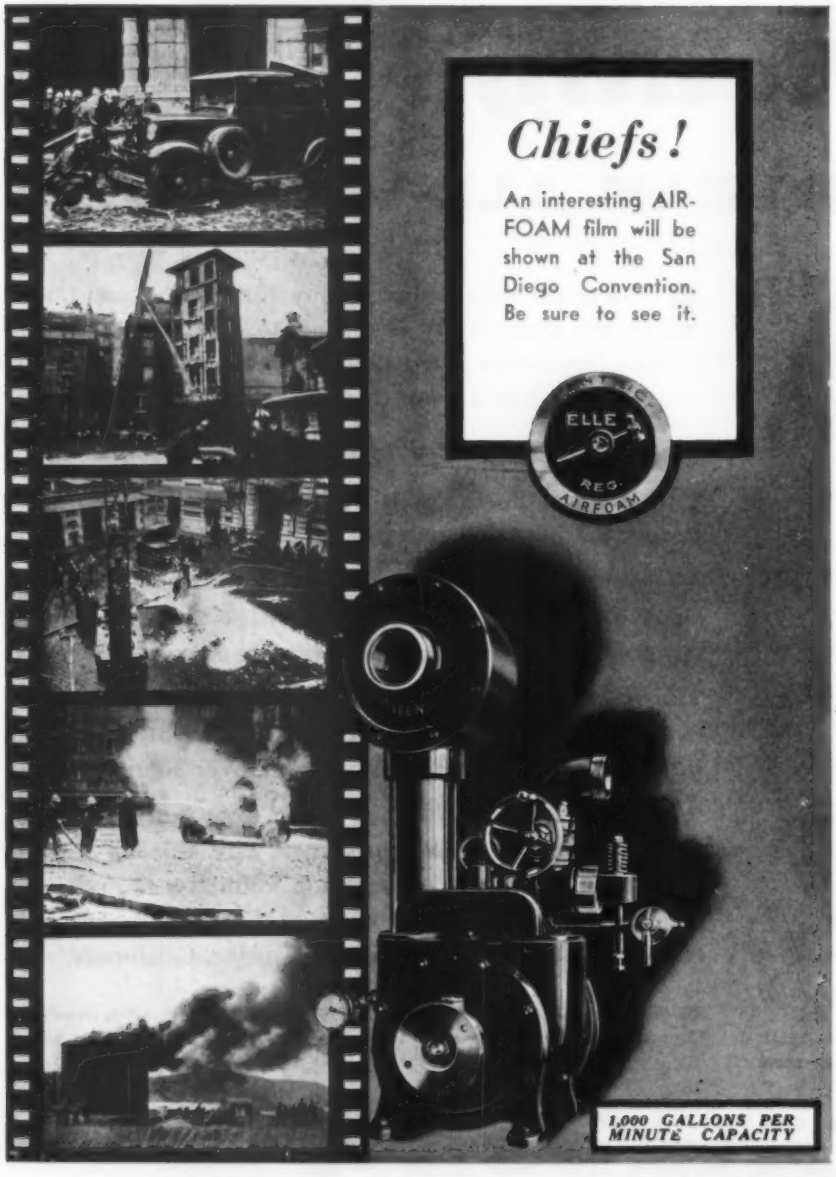
A Proven Fire Fighting Innovation Every Fire Department Can Afford


Chiefs!
An interesting AIR-FOAM film will be shown at the San Diego Convention. Be sure to see it.
ELLE
REG.
AIRFOAM
1,000 GALLONS PER MINUTE CAPACITY

EXHAUSTIVE tests and actual fire fighting experience in Europe during the past two years have clearly proven mechanically-made AIRFOAM to be vastly superior to chemically-made foam. It is not only far more practical in every way, but costs next to nothing in comparison.

THE Ellehammer Airfoam Pump, which produces the mechanical AIRFOAM, is simple, compact and can readily be connected to any automobile drive or crank shaft or to an electric motor. It requires no hydrant or pump pressure other than its own, and neither does it need an abundant supply of water. The unusual principle of the AIRFOAM method, using as it does such a relatively small percentage of water and only a fractional amount of extract, makes it possible to produce almost unlimited quantities of AIRFOAM at any fire.

TOO, mechanical AIRFOAM contains nothing that will damage even the daintiest of fabrics and neither does it cause any water damage.

ALL in all, the AIRFOAM method is ideally suited to the modern fire fighting needs of America.

AIRFOAM
CONSISTS OF
90% AIR
9.8% WATER
.2% EXTRACT

KAEGI & POVELSEN

40 DUFOURSTRASSE *Owners of World Patent Rights* **ZURICH, SWITZERLAND**

Solves the Problem of Handling Difficult Fires Like These—

$1,000,000 RAILSHOPS BURN IN ALTOONA

(By Special Cable to The Herald.)

PITTSBURGH, Sunday.—Fire today destroyed the Pennsylvania Railroad's million dollar repair shops at Altoona. Soon after the flames were discovered a series of explosions scattered burning embers over a wide area in the extensive plant, and this with the low water pressure, seriously hampered the firemen in their attempts to subdue the blaze.

officials estimated that the ... and other equip... shops await-

FIRE BRINGS $1,000,000 DOCK LOSS

Twelve Firemen Injured Fighting Baltimore Blaze; Chemical Plants Periled

BALTIMORE (Md.) July 17. (Exclusive)—Twelve firemen were injured, six freight piers were destroyed, and twenty-five freight cars were burned and wrecked here late today in a fire which swept the Clinton-street docks of the Pennsylvania Railroad. The loss is estimated at more than $1,000,000.

For three hours the fire burned furiously despite efforts of 300 firemen and six fire boats. The plants of the Standard Oil Company, Baltimore Copper Works and half a dozen large chemical manufacturing companies were threatened. Work of the firemen saved the plants.

At times firemen were caught between rings of fire as buildings a block from the main fire blazed up. Three hundred volunteer firemen of industrial plants were on guard at the oil company's plant and other plants.

An export tobacco warehouse, 200 by 300 feet, packed with ho...hhead tobacco for export and othe... was leveled within an ho... sands of tons of bur... slid into the b... great geysers ... pillar ...

...ive Killed, 19 Injured ...hen Ritz Tower Fire ...uses Chemical Blast

...ared Dying, 15 ...s Condition, After ... 25 Feet Below ... Park Avenue.

...ATCHING ...E ARE HURT

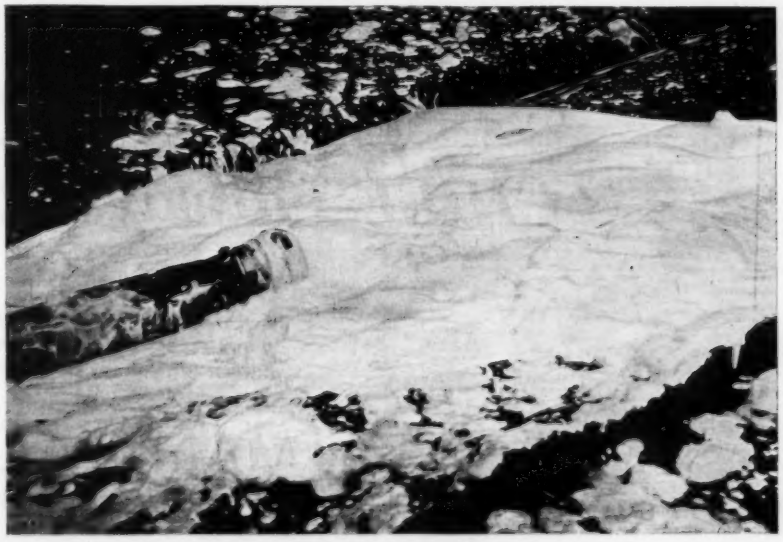
...INJURED ...ELS BLAZE

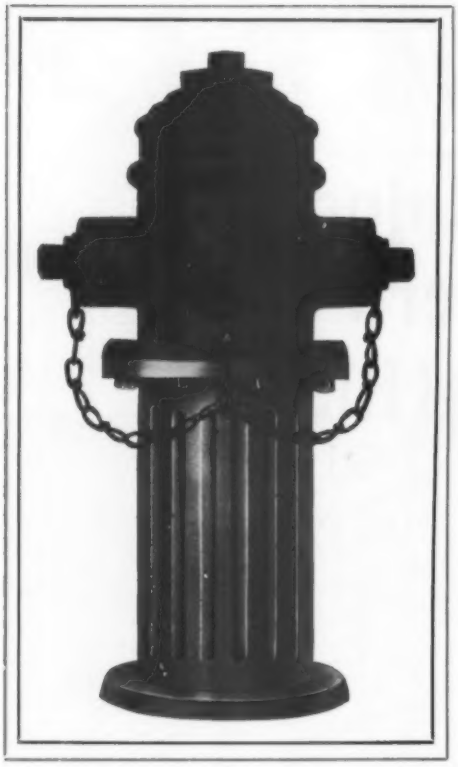
... to The Herald.)

...rsday.—Six firemen ...cores were imperilled ...d.) ...royed a warehouse in ... e today. Four alarms ...inging 30 pieces of ap... ...barrels of oil added fuel ... The injured firemen ... ...n showers of the blazing ...

...ondition ...rific chemical ...nich rocked the 42- ...ment-hotel.

Thirty fi... ...been fight... ing a pers... small ... room fo... Pressure Drops; Entire Re... when th... gion Seared by Record Wave ... concret... ... from ... BY WILEY S. SCRIBNER ... the f... Universal Service ... while ... CHICAGO, July 15.—Thousands ... blaz... of Chicagoans sought refuge from ... so ... the heat tonight in the parks and ... nc... at bathing beaches. ... o... WATER PRESSURE LOW ... Water pressure in the Chicago ... mains was becoming low tonight ... because of the terrific drain by heat ... sufferers. Normal pressure of 40 ... pounds was reduced to 15, and in ... some sections of the city there was ... no water above second stories. The ... low pressure created a fire hazard. ... cut, ... glass while ... by the force of ... The fire was not co... ...ious and was confined to the nar... ...oom, but hundreds of gallons of water poured in open barrels of chemicals used in mixing paints are believed to have produced a chemical phenomenon which caused them to explode. The 30 firemen working in the sub-basement room thus were caught in a powder magazine.





The CRISPIN FIRE HYDRANT

Actually Designed to Help Fire Fighters Speed Up Work

FEW hydrants come as close to being ideally suited to the actual needs of the fire department as the CRISPIN —for instance, note these features.

EXTRA LARGE CAPACITY

A feature which many times gives you sufficient nozzle pressure to put out blazes without using a pumper.

REVOLVING HEAD

A very handy feature, it permits nozzles to be set without moving barrel.

BRASS NOZZLES

Screwed in head—this feature means that threads can be changed quickly whenever necessary.

NOZZLE OPENINGS CAST in HEAD

Permitting change of arrangement and size of nozzles at small cost.

CHIEF—always specify

CRISPIN HYDRANTS

they are made to help you as no other hydrant can. Don't stand by and accept any hydrant when you can get the best hydrant, from your standpoint, by specifying CRISPIN. Full information on request—free.

MULTIPLEX MANUFACTURING CO.

BERWICK, PA. NEW YORK, N. Y.

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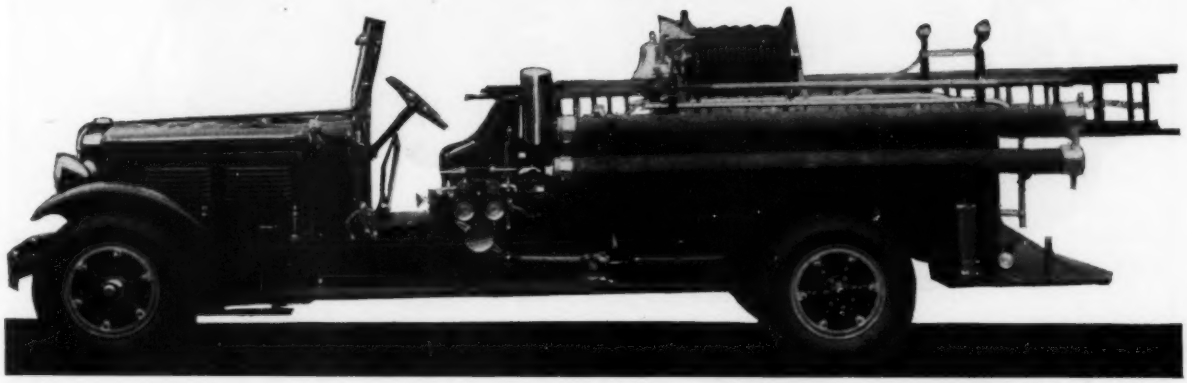

Gives You Greater Dollar for Dollar Value

STUTZ

THE SAME
ENGINEERING BRAINS

THE SAME
OLD RELIABILITY, STAYING
QUALITY and EFFICIENCY

THE SAME
LARGE HORSEPOWER
SAFETY FACTOR

THOROUGHLY new and up-to-the-minute, it is the last word in modern fire fighting machines.

A new low center of gravity gives you greater safety at high speeds. The driver's seat is down where you always wanted it. In many other ways too, the new STUTZ is far superior to anything else on the market today.

If you contemplate adding to your present apparatus get complete details of the new STUTZ line. Sizes range from 300 to 1200 G.P.M., a complete line of hook and ladder trucks, a town and country model for rural fire protection—a truck for every need.

NEW STUTZ FIRE APPARATUS CO., Inc.

HARTFORD CITY, INDIANA

LUVERNE FIRE TRUCK EQUIPMENT

SENIOR Equipment on 2 ton Reo chassis

JUNIOR Equipment on 1½ ton Reo chassis

SENIOR and JUNIOR EQUIPMENT

is furnished in sizes of 300 to 600 gallons pumping capacity

For Any Make of Commercial Truck Chassis

SUBURBAN Equipment on Ford chassis

SUBURBAN EQUIPMENT is furnished for Ford and Chevrolet Truck Chassis, at prices ranging from $515.00 upwards, depending upon customer's requirements.

Descriptive Circulars will be sent on request.

LUVERNE FIRE APPARATUS CO.

LUVERNE, MINNESOTA

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State Distributors wanted for all open territory

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IOWA MUNICIPAL SUPPLY CO.,
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SAMBO

Prevents and Extinguishes

CHIMNEY FIRES

THE modern method of extinguishing chimney fires is simple, cheap and effective. Just scatter a box of SAMBO on the live embers at the source of the blaze and in less time than it takes to tell it the chimney fire is out.

Climbing roofs to fight chimney fires is now taboo. No longer is it necessary to risk life and limb on slippery roofs to shoot chemical or drop chains down the chimney. That's out forever. Now, wise chiefs carry a supply of SAMBO.

If you are skeptical we'll send you the endorsements of many users together with a generous sample for use on your next chimney fire. Or order now by using the handy coupon—and you must be satisfied with SAMBO or we will gladly refund your full purchase price. You take no risk — IT'S THE GREATEST THING YOU EVER USED ON A CHIMNEY FIRE. ORDER NOW.

P.S. How many industrial concerns in your jurisdiction have smoky, dirty chimneys—chimneys that actually constitute a fire hazard? You can protect your community and your industrial plants and rid your town of black smoky chimneys by urging your plant managers to use SAMBO regularly in their chimneys. It does an effective cleaning job at practically no cost. Ask them to write us or better—send us their names and we will cooperate with you.

Chief—

You're Responsible!

You know from experience that there are plenty of thrills and dangerous work in fire fighting without sending your men up over slippery roofs to put out chimney fires.

Spare your men Chief—let SAMBO do the job easily and economically without risking life and limb. It is the modern and better way of putting out chimney fires.

ORDER NOW

GENERAL PRODUCTS COMPANY, Inc.

NORWALK, CONN.

THE GENERAL PRODUCTS COMPANY, Inc.
NORWALK, CONN.

Gentlemen: Please send me 3 dozen boxes of "SAMBO". I'll pay the $15.00 within 30 days.

NAME .....

RANK .....

ADDRESS .....

.....

Thirteen GAMEWELL SPRINKLER WATCHMEN Gave THREE YEARS PERFECT SERVICE at Lewiston, Maine

TELEPHONE 1390

Kirk Electric Co., Inc.
ELECTRICAL CONTRACTORS
APPLIANCES, FIXTURES AND REFRIGERATION
[illegible] BATES STREET

Lewiston, Maine, Apr. 29, 1932

The Gamewell Company
Newton, Mass.

Gentlemen:

Answering your letter regarding false alarms from Sprinkler Alarm Circuits such as we have installed here, will say that we have had this system in use in this city for three years now and have had no false alarms from same.

We have had alarms from sprinkler heads being knocked off by accident, and one box came in when a garage building full of cars collapsed which was a four-story brick block. About the only thing that was left was the box which, altho knocked off the wall, did not happen to break the conduit or circuit and it came in all four rounds O.K.

We have thirteen of these installations and the subscribers are well pleased with the system.

I hope this answers your letter and gives the information you wanted, and if not, write me on any particular thing you may want to know.

With best regards, I am

Yours truly,

K. A. Kirk.

Supt. Fire Alarm
Lewiston, Maine

Here is a three year service record from Lewiston, Maine, that establishes the reliability of the Gamewell SPRINKLER WATCHMAN—not one false alarm from any of the entire thirteen installations in that city. Yet, during the same period several alarms from these SPRINKLER WATCHMAN enabled the fire department to prevent extensive water damage when sprinkler heads were knocked off by accident.

Many properties, large and small, have had the protection of the SPRINKLER WATCHMAN for several years. More sprinklered properties are now purchasing Gamewell master fire alarm boxes for this purpose because they provide the most direct, accurate and economical service available.

Taxpayers everywhere are scrutinizing carefully the expenses of the fire department along with those of other municipal divisions to determine what they are getting for their tax dollars. So, now is the time to show your leading taxpayers how to secure this added protection from the municipal fire alarm system and fire department for a small initial cost and no rental charges.

THE GAMEWELL COMPANY

"A BOX A BLOCK"

NEWTON, MASSACHUSETTS

FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 85 OCTOBER, 1932 Number 10

With the Editor

Telling the Public

Public criticism was directed at the Chicago Fire Department recently for using siamesed hose lines in fighting large fires. The critics contended that there is delay resulting from siamesing a line, during which fire has chance to spread.

Commissioner Daniel J. Carmody lost no time in defending the practice. In a statement in the leading Chicago daily, and which was given a display head, Commissioner Carmody said:

"At large or spreading fires, the engines are usually at some distance from the flames. A single line of 2½-inch hose stretched 1,200 feet from the engine will have 45 pounds pressure at its 1¼-inch nozzle under 319 pounds engine pressure, which approximates a maximum delivery of 309 gallons per minute. This stream would be effective a distance of 66 feet horizontally and 70 feet vertically. It would be practically useless at a large or spreading fire because of the loss of 274 pounds due to friction.

"By siamesing this line with another of the same size and length, using the same nozzle, an engine pressure of only 121 pounds would be required for a nozzle pressure of 45 pounds. If the engine pressure supplying the siamesed lines was increased to 237 pounds, a nozzle pressure of 90 pounds would result, which approximates a maximum delivery of water at the nozzle of 438 gallons per minute. That stream would be effective a distance of 89 feet horizontally and 98 feet vertically."

Those eligible to criticize fire department operations cannot be but convinced of two things: First, that the Fire Department pursued a sensible course in siamesing lines, and second, that the heads of modern fire departments apparently know their business.

It is so seldom that a high official of a fire department is called upon to publicly explain the technical side of his work, such as in defending himself against criticism, that his comments in the public press are apt to attract considerable attention.

A straightforward, sound defense of the type offered by Commissioner Carmody cannot but reflect to the credit of men in the fire service.

It is unfortunate that so many of our leading fire department officials remain silent and in the background until they are forced by criticism to speak publicly. The average citizen has little conception of what the present day fire officer must know to fill his job properly. A little educational material on the inside workings of the Fire Department would not only prove interesting to the majority of newspaper readers, but would also build prestige for the fire service.

Fred Sheppard

San Diego Fire Department

and City Both Have Interesting Histories

By ASSISTANT CHIEF J. E. PARRISH,
San Diego Fire Department

JUST fifty years after Columbus' discovery of America, two tiny sailing vessels cautiously felt their way in past Point Loma and came to anchor in San Diego Bay. It was September, 1542, and the commander of these two little ships was Juan Rodriguez Cabrillo, a Portuguese navigator in the employ of Spain. His little squadron, the "San Salvador" and the "Victoria" brought the first white men to California, and here, so far as records go, California's history began.

Cabrillo's party remained in San Diego Bay a few days, made records of their discovery, took astronomical observations with the crude instruments of their day and sailed on to the north, and it was not until 1769 that the determination of Spain to colonize California crystallized and forces set out by sea and by land—the latter under command of Don Gaspar de Portola—for San Diego. In this group was a man whose name is connected for all time with the development of California, Fr. Junipero Serra, a Franciscan Missionary, who founded the San Diego Mission, first of a string of twenty-one missions, each one day's journey apart, which eventually stretched from San Diego to slightly north of San Francisco.

Although California remained loyal to Spain throughout the revolution of 1811, the year 1822 saw allegiance given to the Republic of Mexico. In 1846 a group of American settlers raised, at Sonoma, the flag of the short lived "California Republic," and in 1848, after the Mexican war, Mexico formally ceded California to the United States.

When San Diego Became an American City

San Diego was first occupied by American forces under Fremont in July, 1846. Four years later it was incorporated as a city, but there was no growth, and in 1852 the charter was lost. By 1870 the population had reached 2,300 and a military post was established, and four years later came recognition of the city as an American port of entry. In the late eighties a tremendous "boom" visited San Diego, people attracted by the wonderful climate and commercial possibilities of the fine land-locked harbor swarmed to San Diego. Real estate soared to dizzy altitudes. A lot purchased for $150 in the morning sold for $500 at noon, and was on the market for $1,000 by nightfall. Then came the crash. It took the city many years to recover from the headaches and heartaches of "The Boom."

Development since then has, fortunately, been of a less spectacular nature. Industrial, cultural and recreational facilities have been provided; the climate has attracted many residents; the strategic location of the city has caused many naval and military posts to be established; dredging of the harbor and the building of fine modern piers and facilities have made the port a leading commercial as well as naval base. Discovery of schools of tuna in southern waters has led to the present development of the fishing industry, and constant efforts are being made to bring new tonnage through the port, both to and from the cities to the east of San Diego.

The Fire Department

In the fall of 1869, the first "firemen's ball" was held. It was a benefit given at Horton's Hall, and resulted in the raising of $250 for a fire truck. A month later, another benefit was given, and in May, 1870, Pioneer Hook and Ladder Company was formed, with W. S. McCormick as foreman. It was not until the end of 1871, however, that the truck was finished. A year later came San Diego Fire Engine Company No. 1. In 1878 the town fire bell arrived and all went well until 1880, when someone broke the bell—and the Fire Department solemnly disbanded. By 1883 the local papers were "viewing with alarm" rather than "pointing with pride," when the Fire Department was mentioned. And then, as always happens, came the big fire which caught the department-less town napping. This blaze, in December, 1884, wiped out one of the town's largest planing mills. The next year Bryant Howard, cashier of the Consolidated National Bank, gave the firemen a new bell, and progress began once more.

J. V. Mumford was the first volunteer Chief of the Fire Department, and was succeeded by Chief A. Mayrhofer, also a volunteer.

First Paid Chief

In December, 1886, the city fathers bought a helmet, trumpet and belt, and presented them to S. M. McDowell, who accepted the paid post of Chief Engineer. McDowell was progressive; he suggested a steam fire engine, two new hose wagons, more horses, a fire alarm system, and a paid department. Some of his suggestions were accepted; one of the hose carts came promptly, and in 1887 the first steam fire engine, a diminutive LaFrance, arrived. By the end of the year, the department's equipment included two steam fire engines, two hose wagons, 3,500 feet of hose, and eleven horses.

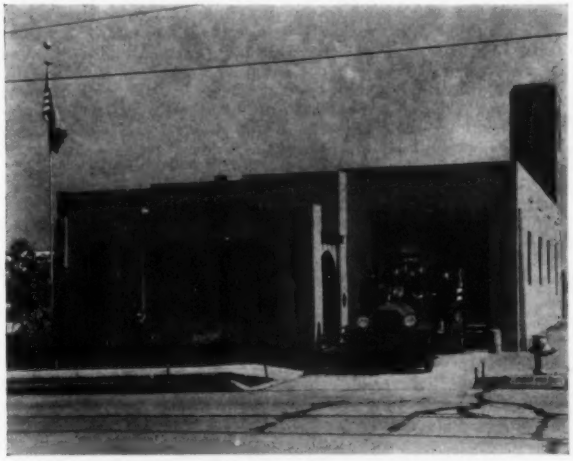
The collapse of the boom in 1888 carried the Fire Department to a low level. The ladder trucks had to be pulled by hand, as there was a shortage of horses. Dis-

San Diego Fire Department Headquarters Is Located in This Station

gusted with the state of affairs, Chief McDowell resigned in March, and was succeeded by Albert Hertz, who, after a short time, was succeeded by Chief Avery. During that year there was what might have been expected in a town where a tremendous bubble of inflated values had suddenly exploded—a series of disastrous fires. Some people hinted that these fires had been inspired by the owners of the property. One of the fires took out half the block bounded by Fifth, Sixth, F and G Streets. There were a lot of other blazes in which the firemen saved the sidewalks, but little else.

New City Charter Provides for Paid Department

In 1889, the adoption of a new city charter provided for a paid Fire Department, directed by a Board of Fire Commissioners. The first chief was selected June 5, 1889. He was A. B. Cairnes. A veteran fireman, he had been foreman of old Washington Engine Co. No. 20, of the New York Volunteers, from 1862 to 1866. He remained at the head of the local department until November, 1905, when he was succeeded by Richard A. Shute, a former member of the San Francisco and



A Typical San Diego Fire Station, Combining Beauty of Design and Harmony with Residential Surroundings

San Diego Fire Departments. Shute served until June, 1907. He was succeeded by Eugene Donnelly, who had been connected with the department, originally as a call man, for a number of years.

George R. Harrison, a volunteer fireman, was appointed Fire Commissioner in July, 1895, and served upon the Board of Fire Commissioners for thirteen years.

Louis Almgren, Jr., the present Chief, took office on May 3, 1909, having been a member of the local department since October, 1902. Under his direction the department has seen its greatest period of expansion. A merit system soon replaced the political selection of personnel for the department, and promotion now became a matter of ability.

Training of the Probationer

Candidates for the Fire Department are placed on probation, after a strict physical examination, for ninety days, at the end of which time they are given a rigid examination on their knowledge of fire apparatus and equipment. Failure to pass this examination 80 per cent or better results in rejection. Examinations are given

This Company Station Combines Modern Efficiency in Design with a Homelike Exterior

at the end of each year of service and must be satisfactory before a man can attain the next higher rating. Training classes are conducted, where firemen are constantly being prepared to perform the duties of their own and the next higher grade. This system of training has resulted in a high degree of individual efficiency. Company drills are held every afternoon from 2 to 4 o'clock, except Sunday. A 5-story drill tower has been provided where the usual company evolutions are performed.

As early as 1909, Chief Almgren, realizing that a large part of the damage done at fires is caused by water, equipped each Company with tarpaulins, and salvage from water damage has been regularly practiced.

Companies and Personnel of the Fire Department

At the present time there are nineteen engine companies, two truck companies, and a fire boat, all motorized, housed in twenty stations, manned by 212 officers and firemen, composing two battalions working under the two-platoon system, twenty-four hours on, and twenty-four hours off, covering an area within the city limits of 100 square miles.

The department maintains its own repair shop, manned by the crew of Engine Co. No. 6, where, under the supervision of Master Mechanic H. L. Golay, repairs are made on a twenty-four hour basis. Much valuable equipment is made at this shop, and it was here that the fire boat was designed and built by members of the department on duty.

San Diego's Fire Boat

The fire boat "Bill Kettner," length 65 feet, beam 18 feet, draft 5 1-2 feet, tonnage 55 gross, has a speed of 10 knots. The boat is propelled by a six-cylinder, 220-horsepower Atlas marine engine. Two double runner centrifugal pumps, rated at 1,500 g. p. m. each at 125 pounds pump pressure, are driven by six-cylinder Seagrave motors, and a third pump is driven by the propelling engine, through clutch couplings. A turret with 1½ in. to 2½ in. nozzle tips is mounted eighteen feet above the deck. Two monitors with nozzle tips up to 2 inches are mounted forward. All hose is carried on reels above deck. Complete minor equipment is carried. This fire boat, the pioneer in the use of internal combustion engines for fire boats, was placed in service in 1919, and provides fire protection for commercial vessels, naval

vessels, fishing fleets, and warehouse and industrial plants along the waterfront.

Fire Alarm and Fire Prevention

A modern fire alarm system is part of the Fire Department, under the general supervision of the Chief, and the direction of Assistant Superintendent of Fire Alarms J. W. Collins, with headquarters in a one-story reinforced concrete, fireproof, isolated building located in Balboa Park. Apparatus at headquarters is of Gamewell make and manual type, placed in service in the present office in April, 1929.

A fire prevention bureau is maintained under the general supervision of the Chief of the Fire Department, who is assisted by E. R. Newton, Fire Marshal. Under the direction of the Fire Marshal, fire prevention inspections are made, theatres, schools, hospitals, and garages being inspected. The circumstances surrounding all fires of suspicious origin are thoroughly investigated and frequent prosecutions have a tendency to prevent arson fires. The fire protection bureau also conducts work of an educational nature before schools, lodges, and fraternal organizations interested in fire prevention. The average annual per capita loss for the last five years is 81c. It is worthy of note that these figures are based on actual losses and not on estimated losses. The low fire losses have resulted in a very low fire insurance rate.

Firemen's Relief

For the protection of the fireman, the Firemen's Relief and Pension Fund is maintained by 2 per cent of members salaries, fines, donations, part of police court fines, police collected licenses, and city appropriations. Members may be retired on a pension of half-pay after an aggregate service of twenty years, or if disabled in line of duty, upon their written request, or for the good of the service. Provision is made to increase or decrease pensions to meet the prevailing salary scale of the department. Relief is given dependent relatives of members killed in service or of those dying a natural death after five years service.

City Host to Several Conventions

During 1932 the Fire Department of San Diego has acted as host to the 10th Annual Convention of the California State Firemens' Association and the Ladies Auxiliary of the C. S. F. A., and the International Association of Fire Fighters Convention. All arrangements have been perfected for the 39th Annual Convention of the Pacific Coast Association of Fire Chiefs, October 17, and for the 60th Annual Convention of the International Association of Fire Chiefs, October 18 to 21, inclusive. We hope for and expect a large attendance at these conventions.

The Largest American Flag Appears in Firemen's Parade

What is considered to be the largest American flag, appeared in the annual firemen's parade held in Washington, D. C., on Labor Day, September 7. It was carried by 150 men.

Massachusetts Firemen Hold Convention

The fifty-third annual convention of the Massachusetts State Firemen's Association was held in Springfield, Mass., September 6-8 with headquarters in the Hotel Clinton and meetings in the Municipal Auditorium.

On the opening day there were addresses of welcome by Mayor Dwight R. Winter, Walter J. Kenefick, President of the Board of Aldermen; Fire Commissioner Doherty, and Adrian L. Potter, Secretary of the Convention Bureau of the Springfield Chamber of Commerce. Chief William C. Mahoney, of Peabody, replied in behalf of the association. Reports were received from the Board of Directors and from Secretary Daniel J. Looney. President James S. Koen, Chief of the Salem, Mass., Fire Department, directed the proceedings.

Speakers at the second session were Charles F. Ely, who brought the greetings of his brother, Governor Joseph B. Ely; Congressman William J. Granfield; County Treasurer John J. Murphy; State Fire Marshal James M. Hurley; District Attorney Hugh R. Cregg; Ex-Mayor Malcolm E. Nichols, of Boston; State Treasurer Charles F. Hurley; Theodore A. Glynn, Chairman of the Boston Board of Street Commissioners and Ex-fire Commissioner; and Mrs. Nancy J. Geary, of Fall River, President of the Woman's Auxiliary. The memorial address and prayer by the Rev. Dr. D. H. McDermott followed the reading of the roll of members who died during the past year.

The following officers were elected: Chief James S. Koen, Salem, President; Joseph J. King, Lawrence, First Vice-President; F. T. J. McNamara, Swampscott, Second Vice-President; W. A. Adams, Worcester, Sergeant-at-arms; Edward J. Coveney, Boston, Commissioner for the $18,000 Firemen's Relief Fund; Alfred Vania, Worcester, D. J. Cavanaugh, Holyoke, and Henry Hilton, Gloucester, directors.

The entertainment features included a dance, vaudeville show, banquet, and baseball game between the fire department teams of Fall River and Springfield.

HARRY BELKNAP.

Washington Fire Chiefs Organize

Thirty-nine fire chiefs from various parts of the State of Washington met in Seattle on August 1, for the purpose of forming an organization. All present were unanimous in the opinion that a state association was very much needed. Many chiefs who were not present sent telegrams and letters approving of such a movement.

Capt. W. A. Groce, Assistant State Fire Marshal, acted as chairman. A set of temporary by-laws and a constitution was adopted. Officers were elected as follows: Chas. E. Swanson, Chief, Everett, President; Ray Hare, Chief, of Yakima, Vice-President; E. J. Treese, Chief, Raymond, Second Vice-President; Capt. W. A. Groce, Assistant State Fire Marshal, Olympia, Secretary; Chas. H. Tracey, Chief, Arlington, Treasurer; O. H. Ebbinghouse, Battalion Chief, Seattle, Rex Putman, Chief, Wapato, Bert Sybrant, Chief, Bellingham and E. J. Grandchamp, Chief, Onalaska, were elected to the Board of Control.

The association is to be known as the "Washington State Association of Fire Chiefs." Only executives of Fire Departments and departments of Fire Marshal are eligible to membership.

The Chiefs were greatly interested in the condition brought about by cities pruning their budgets for the ensuing year. In a few instances citizen tax leagues have advocated the abolishment of the two-platoon system as an economic measure while others want the department personnel to be cut. This problem was discussed at the meeting. It was the opinion of all present that it would take concerted effort of all interested in the welfare of their city to bring the seriousness of these matters to the city officials.

The next meeting will be held in December, the date and places to be decided by the officers

Directing Fire Apparatus

to Houses Without Numbers in Private Developments

By JOHN SPENCER,
Deputy Chief,
New York Fire Department

Deputy Chief John Spencer

THE Country Club Grounds at Dongan Hills, Staten Island, New York City, comprise an area of about one and one half square miles, containing about eighty residences, the Country Club house, and a large girls' school.

The roads are winding and irregular in layout because they have to be accommodated to the rolling contour of the ground, and because there is a rise of about three hundred feet between the south and north sides of the Country Club grounds.

Many of the roads have sign posts at the intersections but very few of the houses have numbers, so that it is almost impossible to locate any given residence without asking directions from some local resident.

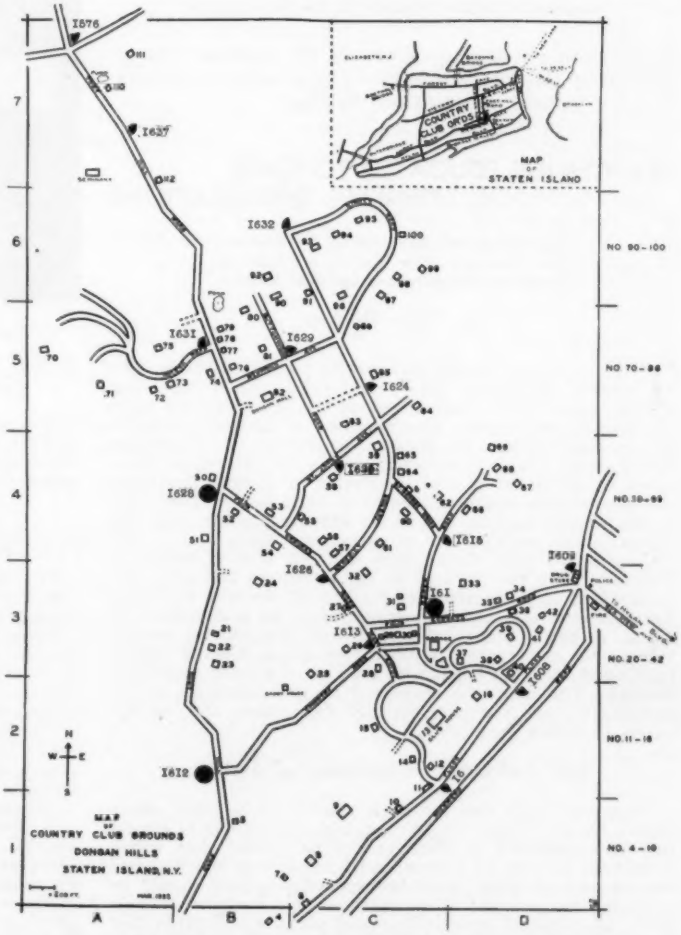
The Dongan Hills Improvement Society sought to remedy this condition by preparing a map which would show the location of every house, so that a stranger could find any house without asking questions and wasting time.

At my suggestion the improvement Society then prepared another map which shows the numbers assigned to every house, and either on the reverse side of the map, or on a separate sheet, is shown the names of every resident, the number of his house, and the location of his house on the map.

To make this information instantly available when wanted, each house is furnished with a large red tag which reads "FIRE-POLICE," "HOUSE NO. ——," (with the number of the particular house inserted). Each house owner attaches this tag to his telephone, so that in case of fire he calls for the Fire Department and says "This is house number . . . (giving the number on his tag) in the Country Club Grounds, Dongan Hills." The Fire Department operator at headquarters receives this message, including perhaps the name of the house owner, and immediately directs the proper Engine House to proceed to "House No. . . . (giving house number), Country Club Grounds," but not until he has checked the number and name on his own map and list of owners names. The Engine House also has its own map and list of owners on its desk for easy reference, as well as a waterproofed copy of the map with list of names on the reverse side, rolled in a fiber tube, and carried under the seat of the leading piece of apparatus, so that the fireman riding beside the driver can direct him, if necessary, while they are proceeding to the fire. Each Chief also carries a similar waterproofed copy of the map, with owners names, in a fiber tube, in his own car, so that he can reach the fire from whatever part of the island he may be in, when the alarm comes.

The house owner's red tag attached to his telephone is marked "FIRE-POLICE" because the same system works with the Police Department, which has similar maps at the Police Station House, and in the cars of the patrolmen who may be sent to any given house.

Since the system has been installed it has been tried



Map of Country Club Grounds at Dongan Hills, Staten Island, N. Y.

The large black circles indicate fire alarm boxes while the black quarter circles represent the location of dummy fire alarm boxes to be replaced by regular boxes as soon as local conditions warrant the change. The rectangles represent houses and the numbers alongside help in directing apparatus, in accordance with a chart.

several times and has worked perfectly, to the great satisfaction of both the Fire and Police Departments and the house owners.

To maintain the greatest efficiency it is desirable to have occasional tests, and periodical inspections of the red tags on the house owners telephones. The Dongan Hills Improvement Society undertakes to make the inspections of the red tags, and the Fire and Police Departments carry out whatever tests they deem necessary.

It is only fair to say that the development and inaugu-

The enclosed Red Tag should be attached to your telephone . . . or fastened to the wall near your telephone . . . . . .

If you call the Fire Department or the Police Department, say: *"This is house number* (give number on Red Tag) *Country Club Grounds"* and also give them your name.

Be sure that you give the house number to the Fire or Police Department and NOT to the telephone operator.

The Fire and Police Departments have maps showing the exact location of your house, so that, if you give them the house number, they will probably reach you in half the time that would be required if you do not use the house number.

DONGAN HILLS IMPROVEMENT ASSOCIATION

June 1932

Instruction Card to Resident in the Development

ration of this system again proves the alertness and efficiency of the New York Fire Department in preparation for, as well as actual fire fighting.

WATCHMEN EDUCATED TO CARE FOR SPRINKLER INSTALLATIONS

Excellent Results Reported by the Worcester Insurance Fire Patrol in Training Employees to Understand Sprinkler Systems

By Harry Belknap

THE Sprinkler School inaugurated by the Insurance Fire Patrol, Worcester, Mass., two years ago is, according to Supt. L. G. Walden, one of the most effective steps yet adopted to increase the efficiency of sprinkler systems and decrease the loss by either fire or water. The Worcester Safety Council invited, on behalf of the Fire Patrol, all managers of industrial plants, owners of mercantile buildings and the leading insurance agents to send any of their men to the school without charge to become familiar with the operation and maintenance of sprinkler systems.

Classes are held three times a week from October to February from two to four in the afternoon and over two hundred men have attended. Two Rockwood Sprinkler Systems—one wet and one dry—are set up and connected. These included the regular wet and dry valves, shutoff valves, air compressor, water-motor gong, electric alarm, piping and sprinkler heads with a series of window sprinklers outside. The men are instructed in the principles of the system and are required actually to operate the various valves to insure familiarity.

Men Instructed in Principles of System

They are taught that materials should not be piled within twelve inches of the heads; that high degree heads should not be substituted in place of regular heads; that valves should not be shut off without notification; that heads should not be painted; that heads in exposed locations should be protected by guards; that under no circumstance should heads be removed over boilers and plugs substituted; that partitions should not be erected or structural changes made that affect the efficiency of water distribution and that seals should not be broken except in emergencies.

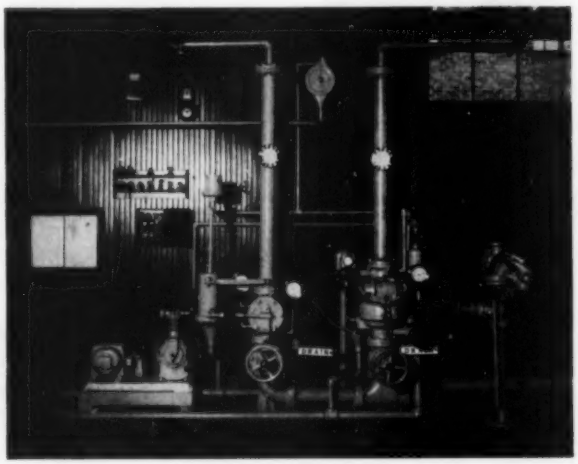
They are shown how to replace heads and restore the system to service. They are urged to check the air pressure once a day; to examine the electric wiring in case of false alarms and after water hammers to examine the seat of the valve if the water gong continues to operate.

Chief Charles L. McCarthy of the Worcester Fire Department, who was largely instrumental in the establishment of the school, has made this instruction part of his drill school program so that every man in the Fire Department is acquainted with the operation of a sprinkler system.

The Patrol carries twenty-four heads of various degrees on its two trucks in specially made boxes which prevent damage to the heads. The trucks carry a book showing the location of the valves and the easiest method of entrance. For over a hundred properties, there are keys on the trucks. The book also contains the names and telephone numbers of men who should be notified in cases of fire and also a table of the air pressures that are required against various water pressures. When it is necessary to leave a system out of service, a man is left on the premises until the watchman reports or the system is restored.

The sprinkler apparatus was loaned by the Rockwood Company and installed by Rufus Ham, a member of the Patrol, who is a trained sprinkler man.

A greater number of manufacturing plants in Worcester are protected by sprinklers than in most cities of equal size.



Demonstration Sprinkler System at Fire Patrol School

The air check at the right has been cut away to show the method of operation.

The mercantile establishments are rapidly being protected and this school is daily demonstrating its value in enabling these owners to get the utmost protection with the minimum interruption to their business.

Delaware Volunteers Hold Convention

The twelfth annual convention of the Delaware State Volunteer Firemen's Association was held in Wilmington, September 21 and 22.

George T. Kelly, Trustee of the Firemen's Home at Hudson, N. Y., urged a firemen's home in Delaware as a memorial to William H. Todd whom he described as the greatest firemen of them all. He opened his talk with a glowing tribute to the late Mr. Todd.

The new officers are J. Elmer Haddaway, Wyoming, President; Samuel C. Pierce, Lewes, Vice-President; John T. Guyer, Richardson Park, re-elected Treasurer and Samuel H. Carson, Dover, re-elected Secretary.

The next convention will be held in Laurel.

A resolution was adopted calling for an increase in the appropriation received by each company from the state. At the present time each fire company receives $500 a year from the state.

The volunteer firemen protested against taxation on the gasoline and oil used by fire-fighting apparatus. The Executive Board, and if necessary the Legislative Committee, were directed to take all necessary steps to remedy this matter.

The President recommended that the State organization confer with the proper officials of the University of Delaware relative to establishing a two or three-day course.

Legal Technicalities which Govern Action of Municipal Officials in

The Dismissal of Firemen

By LEO T. PARKER, Attorney-at-Law

RECENT decisions rendered by the higher Courts in different localities indicate certain well defined legal rules pertaining to discharge and dismissal from service of municipal firemen.

Broadly speaking, a municipal fireman may be legally dismissed from service if no state or city laws, or valid rules and regulations, are violated by the officials who issue the dismissal order. On the other hand, the law is well established that the dismissed fireman has legal right to demand that a Court of proper jurisdiction review testimony relevant to the discharge action. Moreover, the employee is entitled to introduce evidence in his favor in view of convincing the Court that such discharge was illegal or based upon fraud or unfounded prejudice. Usually, the discharged employee is required to prove that the complained of dismissal was illegal, although frequently the Court may determine illegality without special proof on the part of the employee.

In all suits, however, involving dismissal of a municipal fireman, it is necessary that at the time the legal action is filed all parties having official connection therewith shall be named in the suit. Therefore, in view of these rules, established by higher Court decisions, it is apparent that suits filed by discharged municipal employees may fail unless the principles of the law are well understood.

Subjects Treated in This Article

When a Municipal Fireman May Be Legally Dismissed from the Service

Burden of Proof on the Employee

The Dismissal Charges Must Be Proved

Court Upholds Director in Dismissal of Employee

When Officials May Discharge Fireman

City Council Not Named in Suit for Reinstatement

Veteran Preference Law Held Valid

Burden of Proof on Employee

It is recognized law that where a municipal employee is discharged from duties such discharge is considered legal until a Court orders reinstatement. Generally speaking, the employee is obligated to supply testimony sufficient to convince the Court that the discharge was illegal, otherwise the Court will not reverse the previous discharge action. This point of the law was discussed in the recent case of Lindsey vs. Hudson County, 160 Atl. 212.

The records of this case show that a municipal employee was discharged from service. The employee filed legal proceedings based upon the contention that the discharge was invalid, and requested the Court to render a judgment ordering the municipality to pay back salary from the date of the alleged illegal discharge. However, since convincing evidence was not introduced by the employee showing that the discharge was illegal, the higher Court refused to render its judgment in favor of the employee, and said:

"The rule which must control the disposition of this motion is well settled in this state. It is to the effect that the official or body charged with the duty of suspending or discharging an employee or person holding a position is acting judicially when so doing. His action is subject to review, and may be reversed. Until reversed, it stands."

Dismissal Charges Must Be Proved

On the other hand, it is well settled law that a municipal member of a Fire Department who is dismissed from employ of the city has legal right to appeal to a Court on the grounds that the charges filed against him were not substantially proven to be true. If the Court decides that the charges are not clearly proven, the employee will be reinstated. So held a higher Court in the late case of Armstrong vs. Board of Civil Service Commissioners, 48 S. W. (2d) 1055.

The facts of this case are that a department employee named Armstrong was dismissed from the service. The dismissal was upheld by the Board of Civil Service Commissioners after testimony had been given to the effect that the employee was inefficient and had failed to properly attend to his regular assigned duties. Armstrong appealed to the Court on the grounds that the testimony given did not conclusively prove the charges to be true.

After carefully reviewing all of the testimony the Court decided that the testimony did not conclusively prove that the charges filed justified the dismissal, and said:

"We have read and re-read the testimony of Armstrong and find nothing therein tending even remotely to sustain either of the charges against him. . . . Fair play demanded an exoneration of the accused, when the charges against him were not sustained. The right and power of the city to rid itself of dishonest, inefficient, and incompetent officers cannot be doubted or denied, but the just rights of an accused officer must be respected. He may not be dismissed in the absence of specific charges and legal evidence sufficient to justify such drastic action."

Court Upholds Director's Dismissal

The higher Courts have consistently held that it is impractical and unwise to reverse an order of dismissal of a municipal fireman issued by a director of public safety, or other municipal official, where it is clearly proved that the dismissal resulted from violation by the fireman of reasonable rules and regulations. This point of the law

was upheld in the recent case of Kerr vs. Atlantic City, 157 Atl. 559.

The facts of this case are that an employee was discharged from municipal service by the Director of Public Safety after the latter received testimony to the effect that the employee had made an effort to commit a robbery. The employee appealed to the higher Court on the contention that the testimony introduced did not prove conclusively that he had attempted to commit the robbery. However, the higher Court refused to reverse the decision of the Director, and stated the following important law:

"In reviewing the action of a Director of Public Safety, this Court will not weigh the evidence taken before him, for the purpose of reaching an independent conclusion on the question of the guilt or innocence of the prosecutor. It will only consider such evidence for the purpose of determining whether or not it affords a rational basis for the judgment against him, if it does, then no matter whether the evidence be weak or strong, this Court will not interfere."

When Officials May Discharge Fireman

Municipal officials may lawfully discharge firemen with the object of reducing municipal expenses, providing it is not absolutely necessary to retain the firemen for protection of property and, also, providing such discharge is not made in violation to a state or city law. This point of the law was discussed in the late case of Spears vs. Board of Commissioners of North Bergen, 159 Atl. 154.

In this case it was shown that the municipal officials discharged ten city firemen on the grounds that their services were not required and, also, with expressed purpose of reducing municipal expenses. The firemen filed suit and requested the Court to grant a decree requiring the officials to reinstate them.

During the trial the firemen testified that the discharge was the result of political influence. However, since the discharged firemen failed to prove fraud or other illegal practices on the part of the officials, the Court held the discharge valid, and said:

"The prosecutors' (firemens') principal contention is that the alleged motive of economy was a false one, and that the real purpose of the removal was political. There is little, if any, evidence to support this claim, and plenty of evidence to sustain the good faith of the Commissioners. A large saving was effected. . . . A great deal of testimony was introduced to show that these additional firemen were desirable or necessary to properly protect life and property. There is no doubt the additional protection may be preferable, if it were not a burden on the taxpayers. However, the question of curtailing the forces in the interest of economy was one within the discretion of the governing body, and this Court cannot review that action."

City Council Not Named in Reinstatement Suit

Generally speaking, a municipal fireman, who complains about being discharged and files suit to compel reinstatement, necessarily must include in the suit all parties having participated in acts resulting in his discharge.

For illustration, in Daniels vs. Dundon, 241 N. W. 718, it was shown that a municipal charter provides, as follows:

"After this charter takes effect and the personnel of each department has been appointed thereunder, no policeman or fireman shall be discharged by the board except for neglect of duty, incompetence and insubordination. . . . The Council shall have authority to increase or reduce the personnel of either department and upon a reduction being ordered the board shall thereupon make such reduction."

At a special meeting of the City Council, called for the purpose of reducing the personnel of the Police and Fire Departments, the City Council passed a resolution that certain employees should be discharged. In compliance with this resolution the Commissions discharged two city employees. The following week the City Council adopted another resolution and ordered the Commissions to employ other persons to take the place of the ones who had been discharged.

The discharged employees filed legal action against the Commissioners but did not include the City Council in the suit. It was contended that the Commissioners had conspired and used trickery in having the employees in suit discharged in order that political friends of the mayor may subsequently be appointed.

The Commissioners denied the charge of conspiracy and alleged that the action of the Council and the board in reducing the force was incident to an economy program in the administration of the city's affairs; and further that the action of the Council and the board a week later in again increasing the membership of the force to its original number was brought about by the conclusion that a mistake had been made in their former action. Also, it was argued that the Council, being a party to the procedure, should have been included in the suit filed by the discharged employees.

After carefully considering all phases of the testimony the higher Court said that, under the circumstances, the discharged employees were not entitled to relief:

"Relators (employees) were removed by the Commission pursuant to a resolution of the Common Council. . . . For such dismissal, if the action was taken in good faith, the charter gave them (employees) no right of appeal. As against the action of the Common Council, even assuming it acted in bad faith as alleged by relators, they can obtain no relief in a proceeding to which the Council is not a party. In view of the action taken by the Common Council, the Commission could not reinstate petitioners (employees) until authorized so to do by proper action of the Council."

Veteran Preference Law Held Valid

It is well established law that a state statute is valid and enforceable by the terms of which preference is given to honorably discharged soldiers or sailors for municipal employment. Obviously, therefore, dismissal or discharge of an ex-veteran is illegal, unless such dismissal is based upon recognized charges. The latest higher Court case involving this point of the law is Swantush vs. City of Detroit, 241 N. W. 265.

In this case it was disclosed that a state law provides:

"In every public department . . . honorably discharged Union soldiers, sailors, and marines of the Civil war, and honorably discharged soldiers, sailors, and marines of the Spanish-American war, of the present war in Europe and of every other war in which the United States of America has been a participant, shall be preferred for appointment and employment; age, loss of limb or other physical impairment which does not, in fact, incapacitate, shall not be deemed to disqualify them: Provided . . . that the applicant shall possess other requisite qualifications which shall be at least equal to those of other applicants."

It was contended that this law was void because it does not require a competitive examination on the part of applicants. However, it is interesting to observe that the higher Court held the law valid, and said:

"In assailing the constitutionality of the above section, plaintiffs as cross-appellants state in their brief that it is their contention the statute does 'not require a competitive examination on the part of applicants' and it provides 'the veteran shall receive preference regardless of his qualifications for the position applied for.' This contention is not tenable because the act expressly provides that the applicant is given preference only when he 'possesses other requisite qualifications, which shall be at least equal to those of other applicants.' . . . A statute giving preference to veteran soldiers in making appointments to minor offices is not invalid as depriving other citizens of equal privileges and immunities."

A Modern Drill Tower

Which Combines Some Unique Features

By RALPH H. SNYDER,
Wichita, Kan.

THE Wichita, Kansas, Fire Department has just completed a new drill tower that contains many new and original features that will be of great interest to members of the Fire Departments over the country. The completion of two new stations at Wichita last year opened a new field in fire house construction, and this tower is expected to do the same in training towers.

Movable Net Makes Drilling Safe

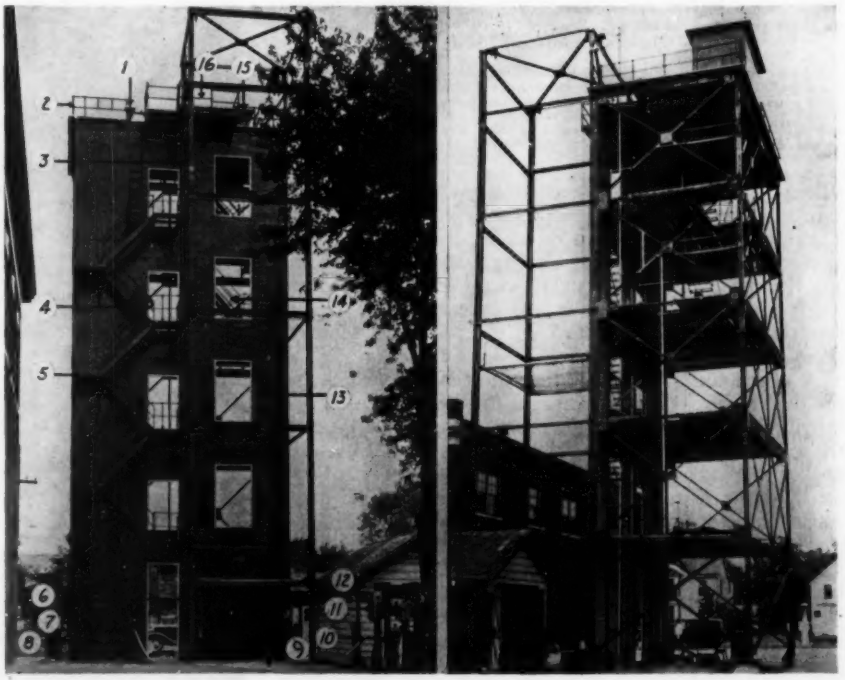
Statistics have shown that many men are killed and injured each year in training accidents on Fire Department drill towers. To completely do away with such accidents a movable net has been devised that, by means of an electrical motor, is kept a few feet under the man or men working on the tower, and in case a man should slip and fall from the top window, it would be only a fall of five or ten feet to the net. The same principle applies to a group of men on the tower. For example, if four men are going up the side ladder on a doughnut hose drill, and the top man slips and falls taking the next man with him, the fall would only be a matter of ten to twelve feet as the net is kept moving up under the last man. This ingenious idea is not only expected to, but will save many lives and injuries in the years to come.

The movable net, although being the most important, is not by far the only new feature. The tower contains every kind of ladder and stairway found in the average buildings. It has an outside straight ladder, an outside standard fire escape and an inside stairway. A two-way standpipe starts at the bottom and has openings on each floor. A section of hose is laid between the fire plug, which is near the tower, and the standpipe. By means of valves permanently fastened to the plug it is possible to flood the hose and standpipe by a quarter turn of one valve, and by shutting it off and opening another valve ahead of it, it is possible to drain the standpipe and hose to the sewer below. A drain pipe is fitted up on the top floor with a hopper opening on it, and when a hose drill is run the line is fastened to the standpipe and the nozzle put on and inserted down into the hopper of the drain pipe which drains the water to the sewer in the alley. Contests are held between the crews as to which crew can get the hose laid and the water out of the nozzle in the quickest time.

A sliding pole is also provided on the inside of the tower to furnish a quick means of descent in case of an alarm. Other details, although small, have not been overlooked. The window sills have been provided with hand holds made from angle irons. The top railing around the tower has sections that open and swing around to afford passage ways to the ladder or to the aerial truck which may be used on the side. As a whole, the tower is nearly perfect for any type of training to be used.

The Department Training School

The entire Training School of the department shows as much ingenuity and careful designing as the tower. School is held in each station in the city from 2 to 3 each day, and subjects such as hydraulics, first aid, street



Front and Side View of Wichita, Kan., Drill Tower

In the right hand view, the construction is more readily understood. Note how the sliding pole is constructed. The movable net is also seen better in this illustration. On the sides of the window sills, handholds are provided by running angle irons along the inside edges, so that a man standing on the sill has a place where he can grasp a good hold. The following is a key to the numbers shown in the left picture: 1. Hopper funnel on drain pipe to put hose nozzle into; 2. Railing slides out on side to open passageway when aerial truck is used; 3. Standard outside steel ladder; 4. Standpipe openings on each floor; 5. Standard outside steel fire escape; 6. Bottom section of ladder swings up to the left when tower is not in use; 7. Two way standpipe opening; 8. Drain pipe opening; 9. Control cable runs in tunnel underground; 10. Fire plug with valves to drain standpipe and hose; 11. Motor and control to raise and lower net; 12. Movable net that runs up and down under the men working on the tower; 13. Sliding pole inside tower for quick means of coming down; 14. Inside stairway for inside training; 15. House on top of tower covering stairway and 16. Railing slides out to allow open passage when ladder is used.

Upper—Class in First Aid of the Wichita Training School Working on Resuscitation. Lower—A Wichita Hose Crew Going Up the Outside Ladder of Tower

In the upper view, the diving helmet and air pump on the left was constructed by members of the department and has been successfully used a number of times in the recovery of the bodies of drowned persons. The lower picture shows a hose crew going up the outside ladder. The net follows behind the last man, and in case any of them should fall it would only be a drop of a very few feet to the net.

names, plug locations, fire chemistry, ventilation methods, the use of small equipment, etc., are taken up. Contests are held between crews in drills such as connecting a pumper to a plug, laying a short line and timing the speed to obtain water, and raising and extending a fifty foot extension ladder. Competitive drill such as this tends not only to speed up the men, but to make them surer of themselves.

A new man is assigned to Station No. 2, which has the drill tower, and starts in with the work there. He is taught the apparatus and their uses, and is placed with the other men on the drill tower where he learns the proper methods of handling hose, the raising of ladders, etc. In the class room in the afternoon he gradually learns the street and plug locations, how to ventilate a fire, the principles of hydraulics, etc. And after a short time a man that knew nothing at all about fire fighting becomes a valuable asset to the department.

The Wichita Fire Department

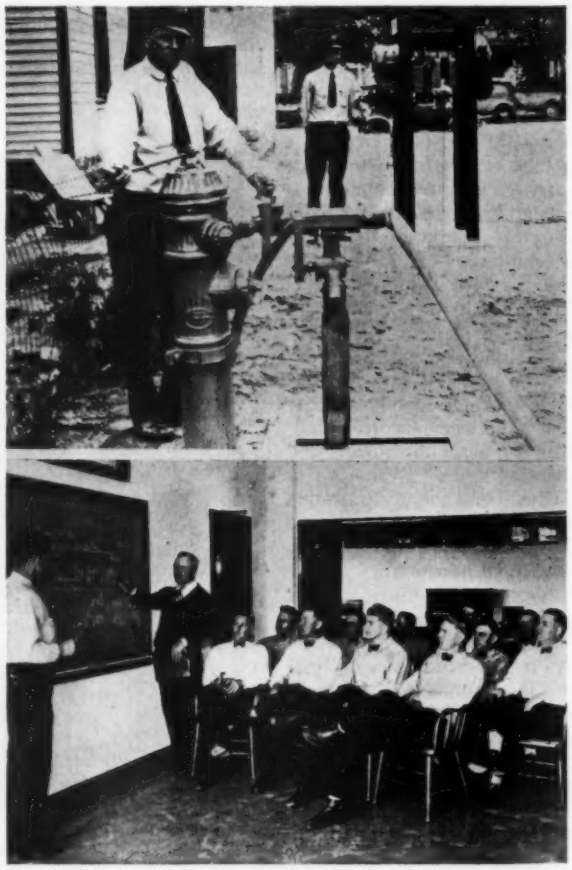
Wichita, a city of 115,000 population, has a record of being one of the cities in the United States with the lowest per capita fire loss. In 1931 the loss was sixty-eight cents, and in 1930, seventy-six cents. The Wichita department consists of eighteen pieces of modern equipment and a personnel of 133 men. The total valuation of buildings and equipment is $597,000.

The tower was constructed from plans drawn up by Fire Chief H. H. McCall, Assistant Chief P. M. Wendel, Battalion Chief George Saunders and other city officials. These same men are also responsible for the planning and construction of the model stations. The citizens of Wichita are proud of these men, as they have not only given them a department that is a credit to the city, but have produced a unit whose service and efficiency has been proven time and time again.

Forest Service Uses Portable Radio

Since 1927 the U. S. Forest Service has been experimenting with the possibilities of radio communication in reporting forest fires and in aiding the men who patrol the forests. Last year specialized sets were developed suitable for the rigorous requirements of national forest use. This year 150 new sets have been added in the west, supplementing existing forest telephone systems.

The type of set used weighs about ten pounds each complete. Its effective radius of communication is ten miles or more, messages may be received by voice and sent by code. Men traveling the roads and trails will carry this set. A larger type of semi-portable set, weighing thirty-five pounds will be used at central stations in lookout towers and at points having telephone connections. These sets have an average radius of fifty miles, and send and receive messages both by voice and telegraph code.



Upper—In the Rear is Shown the Motor and Control which Raises and Lowers the Net (No. 11 in View of Tower). In Foreground is to be Seen the Valve Connections to Drain Standpipe and Hose to Sewer (No. 10 in Other View). Lower—Captain Ernie Matherley Shown Instructing Class in Hydraulics

School is held every day from 2 to 3:30 in all stations in the city. Subjects such as street names, plug locations, first aid, fire chemistry, hydraulics, ventilation methods, etc., are all covered in the indoor classes.

The Fire Service Instructor

The fourth installment of a treatise to aid those responsible for training men in the fire service to develop a systematic type of teaching.

By O. D. ADAMS,
State Director for Vocational Education in Oregon, and Prof., Industrial Education, Oregon State College

and

EDWARD L. BOATRIGHT,
Battalion Chief, Portland, Ore., Fire Department, and Director, Portland Fire College

Chapter IV

Lesson Planning

Need for Planning a Lesson

BEFORE a carpenter starts to build a dwelling, he will have some sort of plan. He will know how large a house is to be built, he will know what sort of foundation to put under it, and in most cases, he will have a sketch or blueprint setting forth the ideas of the builder. The blueprint is comparable to a lesson plan. It is a chart or device that aids the carpenter in carrying out the contemplated project. A lesson plan is the same thing. It is an orderly, systematic device that enables the instructor to teach a better lesson. It is not recommended that a plan be prepared on paper for every lesson you expect to teach in the future, but it is absolutely necessary that you become accustomed to a systematic way of organizing your material, and this can be done if you will follow the plan as set forth in this chapter. The process will soon become second nature to you, and the need for planning will unconsciously be realized. As you progress in practice and use, the burden of plan making will prove to be a time saver and a real help.

The Topic

The first essential in making the lesson plan is to decide on the unit to be taught, some specific unit that can be controlled within the time limitations of both the instructor and the learner. To illustrate: You might easily teach a person to make a paper cup in one lesson, but you could not teach him automobile repairing in one lesson. I think the point is clear here, for the reason that in the second instance the repairing of an automobile consists of more than it is possible for an instructor to give in one lesson, and certainly more than a human being can learn in one lesson.

In naming your unit, be sure the name is inclusive and that the unit can be taught in the period of time allotted. Suppose you were to announce a lesson on the topic "How to Use the Safety Belt Under Any Condition." Could this lesson be taught in an hour? Probably not. The uses of the safety belt are too numerous, let alone teaching a green man how to use it. Suppose you announce, instead, as your topic of instruction "Rescue by Use of Safety Belt." At once you confine the topic—it has limitations. You do not need to show how to fasten an axe or a sledge or any other equipment on the belt. You have contracted to show how to rescue a person by the use of the safety belt. You have given the topic a meaning.

The Objective

During the War, the word "objective" came into general use—every soldier knew what the word meant. In other words, he knew that when an objective was decided upon, it was absolutely necessary that he put forth every effort, even to the supreme sacrifice, to reach his destination. The objective in teaching a lesson is named to indicate the direction in which you are going—signifying what you expect the results to show. To illustrate, in the paper cup, the objective might be stated as follows: To give appreciation and ability to fold a paper cup.

Materials and Equipment

It is good practice to list the materials and perhaps equipment in order to check and make ready for the lesson completely. No doubt, the house to house agent would be embarrassed if he lost an order for the lack of a fountain pen he had forgotten. A good instructor makes careful preparation. He has equipment and materials ready for immediate use, to make the instruction complete, interesting and successful.

What and How

Success in teaching, like success in life, depends on two things—knowing what to do and knowing how to do it. In your occupation, your rank or your position is sufficient to indicate that you know "what to do," that is, you know your job. Knowing how to teach is the thing you are to learn from the course as offered in this book, the HOW of teaching firemen. The next few pages of this chapter will be devoted to making teaching plans set up to show the topic, the objective, the materials and equipment, the what and how, the four steps of the instruction process, and suggestive instruction methods to be used. It all sounds hard, but it isn't. Just keep plugging through, and you will win out. Remember that practically all you have you have worked for.

With your past experience and the information already gained, you will experience no difficulty in lesson planning. In all probability the following form will classify the whole subject for you:

Lesson Plan

A Knowing Job

Topic: The construction, use, and importance of the fire helmet.

Objective: To develop an appreciation of the importance of the helmet through its construction, and to show when, where and how to wear it.

Materials and Equipment: Ordinary fire helmet.

What (Analysis of knowledge or information)	*How* (Instruction method)
Step I—Preparation	
Helmet protects from scalp injury. Helmet has many uses: to break windows, carry water, etc.	Lecture—showing helmet to class. Try to impress on the class the need for knowing and appreciating about the helmet.

Step II—Presentation

Operations or analysis of job, or information.	Demonstration by use of helmet. Lecture. Illustration.
A. From Outside. 1. Made of leather. 2. Pressed from finest cuts. 3. Baked in ovens to harden, and shaped under this process. 4. Made to resist water and heat. 5. Reinforced by ribs or cones. 6. Can be worn in reverse position. 7. Eagle to fasten front-piece.	
B. From Inside. 8. Soft special felt lining, air holes. 9. Brass lining to support and shape.	
C. General. 10. To protect from falling objects. 11. Wear at all times on fire duty.	

Step III—Application

Same as second step.	Let the learner perform. Give him the helmet and let him "tell the story." Aid him when necessary.

Step IV—Test

Same as second step. Ability to do the job.	Must wear helmet at all times, necessary.

Lesson Plan

A Doing Job.

Topic: How to Make a Paper Cup.

Objective: To give appreciation and ability to fold a paper cup.

Materials and Equipment: Square cut sheets of paper.

What	*How*
(Content—For Knowledge and information)	(Methods of Instruction)

Step I—Preparation

Information. Stress the need—picnic—auto accident.	Show paper cup to class. Lecture.

Step II—Presentation

Operations of job. 1. Square cut sheet of paper. 2. Fold paper diagonally. 3. Fold left corner to about center of opposite side. 4. Fold right corner in similar manner to about center of opposite side. 5. Fold one of top flaps down and toward you, and the other down and away from you.	Demonstration by use of cup. Lecture. Illustration by drawings or sketches.

Step III—Application

Same as Step II. Aid by giving advice and assistance only where needed.	Lecture. Demonstration. Questions and Answers.

Step IV—Test

Can he do the job?

Lesson Plan

A Knowing Job.

Topic: The Theory of Ventilation.

Objective: To develop an understanding and appreciation of the need for correct ventilation.

Materials and Equipment: Air tight heater (stove) set up. Blackboard and chalk.

What	*How*
(Job content, or analysis, or operations)	(Instruction methods)

Step I—Preparation

Actual stories of fire where hazard is aggravated through ignorance, and the cost increased.	Lecture. Question (Suggestive).

Step II—Presentation

1. Heat generated through: a. Radiation. b. Conduction. c. Convection. 2. Flames spread upward, then through pressure, downward. 3. Fire consumes oxygen, gives off unburned carbon (carbon monoxide). 4. Smoke hinders fire burning. 5. Fires will burn rapidly if fuel is provided and smoke cleared away. 6. Heated gases and smoke will expand. 7. Fires extinguished. a. Methods of cooling. b. Shutting off oxygen. c. Impregnation with non-combustible materials. 8. "Opening up." 9. "Mushrooming." 10. "Back-draft." 11. "Remedy openings."	Use small airtight heater (stove), to demonstrate. Lecture. Illustrations on blackboard. Illustrated by lantern slides of actual conditions taken at fires.

Step III—Application

Same as Step II.	Lecture. Demonstration. Questions. Discussion. Use of photographs. Illustrations. Ask learner to explain by use of stove and other illustrative material.

(*To be continued*)

Carter Bowser Heads Indiana Firemen

Carter Bowser, of Fort Wayne, Ind., was elected President of the Indiana Firemen's Association at the sixtieth annual convention held in Columbus.

The other officers are Robert McGuire, Gary, First Vice-President; L. W. Brown, Rockville, Second Vice-President; Raymond Coon, Gary, Chaplain; Harry H. Fulmer, Indianapolis, Treasurer; Clem Smith, Terre Haute, Secretary; Joseph Lump, Crown Point, Chairman, Directors, and a Board of Directors consisting of John C. Henry, South Bend; Fred Dilger, Indianapolis; Arnold H. Meister, Anderson; Edmund Buraway, Vincennes, and August Lupkin, New Haven.

Over 2,000 persons registered at this convention. More than one thousand guests were fed at a banquet that was considered the largest ever held in the city. The following day there was a barbecue at which there were two lines over three city blocks long, waiting to be served.

The association reported a gain of 428 in membership. The next convention will be held in Gary. The twenty-three cities of Lake County will unite in caring for the firemen in 1933.

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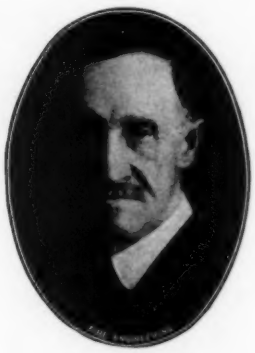

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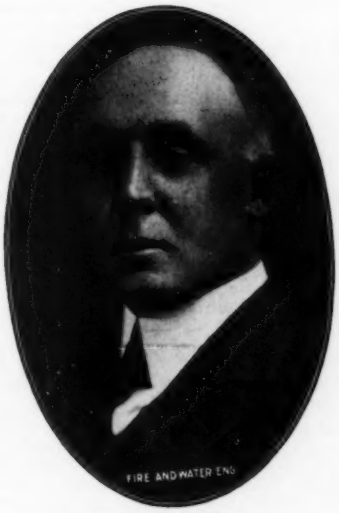

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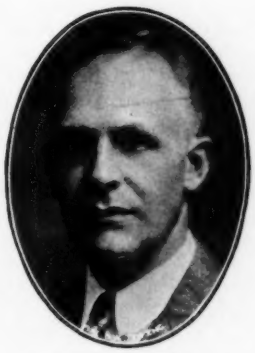

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FIRE DEPARTMENT EQUIPMENT MANUFACTURERS

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

THE VALUE OR RISK OF FIRE DEPARTMENT PARADES

OFF in the distance can be heard the faint staccato beats of the drum. Instantly a score of children become restless, crane their necks, and await the first visible signs of the parade. And the collection of nondescript dogs, dash in and out through the crowded streets trying to find out what it is all about.

At last they come.

In spotless suits, the Fire Commissioners come marching down the crowd-bordered highway. They bow to friends that they can recognize in the sea of faces. The Chief and his assistants, young enough to still feel the thrill of parades, smile in a benedictory manner. Then comes the band with its rows of uniformed musicians, and a side escort of the loose-footed urchins of the town. An endless, so it seems, kaleidoscope of color—the firemen, the shiny apparatus each with its mascot, the ladies' auxiliary, and so on until the picture is dimmed by distance.

It's the annual Fire Department parade.

The appreciative and admiring townfolk line the streets to honor the firemen and applaud those whom they may know.

But the question arises, is it wise to encourage the Fire Department to hold or to participate in parades.

In the box on this page is the problem that is discussed in this issue. In the box on the following page is the question that will be treated in the next issue. Should you have some comments that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th Street, New York, N. Y.

The problem on the three-platoon system, scheduled for this issue, has been held over to the November issue of FIRE ENGINEERING.

Discussion of the Question

James A. Scott, Chief, Arcadia, Fla.: There would be very little accomplished in parading the Fire Department. A Fire Department is not a plaything and should not be taken as such. Parading a fire company would take the apparatus away from the station and consequently you would not be in a position to receive an alarm. If you were on parade and an alarm sounded, considerable confusion would be caused and possible accidents would occur in answering the call. Therefore, I think it a wise move to attempt the abolishment of the Fire Department parade.

Our Fire Department has for some time refused to enter a parade, and it is now a city council rule not to participate.

As our department is largely a volunteer organization, we do not use dress uniforms.

C. M. Beaujean, Chief Melbourne, Fla.: I do not think it wise to abolish Fire Department parades, especially in volunteer departments, as it is a means of placing the small departments in public recognition.

In a parade, the fire apparatus is placed in the lead, so that there will be no confusion in responding to an alarm.

The only uniforms we have are caps and badges which are procured by the city.

F. R. Gisborne, Chief, Sound Beach, Conn.: I believe it would be a wise move on the part of the city officials to attempt to abolish Fire Department parades. It is my opinion that there is too much of a chance of a fire breaking out and getting away before the department would arrive on the scene.

We very seldom go on parade, and at such times that we do, it is within ten miles of our town. We also leave one piece of apparatus and men enough to man it. Instructions are left with one man to telephone to the Police Department of the town in which we are parading and they in turn cooperate with us by notifying us of the fire. We have only paraded out of our district five times in twenty years.

Our uniforms are provided by the Fire Department. This is a volunteer department with two full paid drivers. The paid men get one new uniform a year, two suits of union overalls and one quick hitch suit. If these do not last they have to provide for themselves. Volunteer's suits are replaced as necessary.

Stanley M. Mong, Chief, Dawson, Pa.: I do not think it wise to attempt to abolish Fire Department parades. People of the smaller communities look forward to the Firemen's Street Fair or Jubilee every year, and to the night of the parade. This is one way we have of raising money for the company, and the night of the parade is our big night. Of course we are only a volunteer company.

When our truck takes part in a parade, we remove most of the equipment, and the hose is put on a hand drawn reel for service. We have a very good water pressure for fire protection, our highest point being 58 pounds and our lowest, 118 pounds gravity pressure. Very seldom do we have over two-thirds of the company take part in any parade. This always leaves enough men to take care of the town.

Our uniforms are bought through the fire company and paid out of our general fund. When the company's funds are in shape to buy, we purchase new uniforms.

H. S. Beck, Chief, Mount Airy, Md.: I do not believe it advisable to abolish Fire Department parades, especially in volunteer departments. It gives the men some pleasure and enjoyment to look forward to.

Volunteer fire fighting is a "sad business" and without some sort of pleasure mixed along with it, the men in the company will lose interest and subsequently will refuse to work.

Our department does not furnish any uniforms for parading purposes except dress caps.

The uniform is white duck pants and white shirt, black tie and blue coat, which is maintained by the men themselves. We have no trouble whatsoever

HERE IS THE PROBLEM

Do you believe it wise to attempt to abolish Fire Department parades? Why?

What measures do you follow to facilitate fire alarm response in the event a fire occurs while the men are on parade?

Must the men provide their own dress uniforms or how are they purchased? How often?

to get the men to turn out for the parades.

Our company is young and poor, and that is the reason they do not furnish uniforms. But in the near future they expect to be able to furnish them from money raised by carnivals, suppers and dances.

We always have a fire detail in case anything happens when men are in parade, at home, or away. These men are on duty at the fire station while the parade is going on, and stay on duty until they are relieved by the chief or some officer whom the chief may designate to discharge them.

Firemen's parades are one of the best means to keep up the morale of your volunteer firemen—keep the firemen before the people's eyes—keep interest stirred up at all times and to sum it up—keep the Fire Department at all times in the mind of the townspeople.

W. D. Bount, Chief, La Belle, Fla.: While Fire Department parades may advertise a city to some extent, I cannot help but feel that there is a certain amount of danger both to the people and their property by this practice.

While it may not suit on all occasions, I feel that fire apparatus should be at the head of a procession to allow the apparatus right-of-way should a fire occur, and also to avoid an accident which might endanger the people as well as the firemen.

Chief, Fire Dept., Walkerton, Ind.: Fire department parades, in my estimation, are an excellent means for the people, who make it possible to maintain a Fire Department, to view and see for themselves with what their departments are equipped.

In the event of fire, were we equipped with a number of trucks, I would order a sufficient number to respond to the call—if necessary, the entire company would respond to the alarm.

The town board provides the firemen with uniforms whenever it is necessary.

Charles D. Toole, Chief, Vero Beach, Fla.: A few years ago when we were called upon to parade, we took our three pieces of apparatus and placed them at the front to enable us to get away without passing through the entire parade. At that time we would also leave men at the station with autos who knew our location at all times and would notify us before the alarm was given. At no time were we more than twelve blocks from the station. However, we have put a stop to all parading and the apparatus is only used in case of fire.

Our men, of whom we have thirty-two volunteers and two paid men, buy their own regulation firemen's caps and badges, using regular blue trousers and white shirts for the rest of their uniforms.

Paul D. Joyce, Chief, Haines City, Fla.: I do not believe that it would be good policy to abolish Fire Department parades, for the following reasons from the viewpoint of the Volunteer Fire Department. The usual volunteer fire department depends largely for its maintenance upon the public, and any publicity that they can secure is of material benefit to the department. By appearing in all parades and civic enterprise in their cities they keep themselves before the public.

I do not feel that the apparatus should leave the station, to appear in any parade, unless backed up by other equipment, also that an adequate number of firemen should be held at the station to respond to an alarm, should a fire occur while the parade is in progress.

In this city, where it is not necessary for members to wear uniform coats at any time during the year, the caps and trousers are furnished from the general fund of the department, except for paid firemen which are supplied by the city once a year.

Emil Franz, Chief, Middlebury, Ind.: Parades, in my opinion, are all right in the paid departments, but only the men off duty should participate. But on the other hand if the entire department should take part in the parading, the men on duty should be ready to respond quickly and not attired in a dress uniform which would likely be ruined at a fire.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Do you believe that the time has arrived for the three-platoon system? Why?

In the event that the three-platoon system is desirable, how would you suggest that public opinion be converted to this change?

We have a volunteer department, no salaried men, and we do not put on parades in which our men would have to appear in dress uniforms, but we have our regular fire drills, in which our men engage in hose laying, ladder contests and drills, and last but not least safety drills.

In the case where dress parades are wanted by the men in the department, they should furnish their own dress uniforms. If the dress parades should be called by the city, I believe the city in turn should furnish the needed uniforms. In either case, however, the dress uniforms should be furnished as often as may be necessary so that the men may appear neatly clothed at all parades.

For volunteer departments, I am in favor of more practical drills in which the men may become more efficient, rather than to parade. It is harder to be a volunteer, than to serve on a paid department, because of the fact, that the paid men are more often called into action where they receive practical training nearly daily.

G. Solmander, Chief, Porter, Ind.: I believe it wise to abolish Fire Department parades, especially in cases like our own where there is but one fire company.

This question was brought up last Fourth of July at which time we were requested to parade. I was opposed to it, however, for I do not think it is a very practical idea to be hemmed up in a parade while you might better protect your property owners instead of using the fire truck for show.

In case I should permit such display, I would make arrangements whereby we could be notified of an alarm should any occur while we are participating in the parade.

Our city provides the department members with rubber coats, boots and helmets, but no dress uniforms.

T. B. Boyer, Chief, Fulford, Fla.: Yes, I think it very wise to abolish fire department parades. Under the present financial condition the taxpayer is given a chance for something to talk about and I believe the Fire Department of any city needs the cooperation of its citizens, and the department in turn should avoid any possible chance of criticism.

A fireman is paid to fight fires and not to show off and I believe you will find that if men were allowed to vote they would favor no parades whatsoever.

Our city provides two suits every twelve months—one light and one medium weight.

Glen C. Lawrence, Fire Chief, Galveston, Ind.: I believe it is very foolish to abolish Fire Department parades, because the parades help to remind the people of the protection afforded them by the department and it also instills in the minds of the children respect for the firemen.

The Chief should make it a point to be able to get in touch with the station in case of an alarm and be in a position to direct the trucks to a fire, should one occur when the firemen and apparatus are on parade.

Geo. Rosenberger, Chief, Alexandria, Ind.: I do not think it would be wise to eliminate Fire Department parades in small cities, due to the fact that we are often requested by various organizations of the community to do this for them.

In the case of a fire occurring while out on parade, very little confusion is caused for we only take out one truck to make a display, and volunteers are left in charge.

All members of the department must provide themselves with dress uniforms, but I do not compel them to wear them at all times. They are only asked to wear them at a fireman's funeral or when on parade. I maintain that dress uniforms are too expensive to be worn on the every-day job.

G. Walter Proctor, Chief, Hastings, Fla.: I believe parades are quite all right if one piece of apparatus, at least, is left in the central station, with sufficient personnel to operate it. We have a large siren for sending out fire alarms and this can be heard all over the town, regardless of wind direction. Should an alarm be sent out when the department was on parade this siren would take care of summoning the men to the fire.

We have no dress uniforms. Men use their own dark trousers and white shirts. The department furnishes caps, helmets, rubber coats and boots, only.

F. C. Pfaender, Chief, Winterhaven, Fla.: I cannot say that I believe it a good idea to abolish Fire Department parades altogether as in some states it is a big event. But I do believe parades should not be attempted in small cities where only a limited number of pieces of equipment and a handful of men are available. In larger cities parading should only be allowed where they operate on a two-platoon system. This would call for the men working the off-shift to be on duty while the parade was going on. The apparatus should be so placed so as to not be hindered in any manner should an alarm be sounded during the time of the parading.

If the men are marching and no equipment is on display, things would go on just the same. A fire could occur and be carried on in the regular way, and in case of a general alarm the men in the parade could be notified.

If the city orders the men out I think they should furnish the uniforms or whatever might be needed in make up parade equipment.

R. E. Mottesherd, Chief, Dearborn, Mich.: Yes, I believe parading should be done away with in the case where apparatus that is in service is to be used. In such an instance, the fire protection of the city or village is weakened because the apparatus which is in the best condition mechanically is usually used for parades. Men and apparatus are also out of service due to the fact that no means are made to be able to immediately communicate with fire alarm headquarters.

I do not use men on duty or apparatus in fire service. The only men allowed to parade are those off duty or men relieved by men who are off duty. Men off duty are, however, subject to call to duty at any time in the event of a serious fire. Men are notified by telephone or messenger.

The men wear the regulation uniform of the department when parading and they purchase their own uniforms.

Otto S. Bavis, Chief, Osgood, Ind.: We have only a volunteer department. We, therefore, do not parade. We have used the truck only when we made a drive for funds to buy coats and hats. At such times as these we have a man stationed at the fire house to call us in the event that we are needed. I do not believe in using the Fire Department apparatus as a part of a parade. We have had experience at fires of the difficulty of keeping the crowd away from the apparatus, and should the apparatus be on parade when an alarm was sent in, I believe, the crowd would be still harder to control.

We do not have dress uniforms, as this town is too small for anything besides the necessities.

Edward J. Kentnich, Chief, Monon, Ind.: I do not believe it is advisable to have any parades which require fire fighting equipment because of the great hazard caused by having your equipment in a congested or crowded street.

We have no parades. We do not have a uniformed company.

Frank A. Shaw, Chief, Pascoag, R. I.: I do not think it is wise to abolish Fire Department parades, for parades help to keep the Fire Department before the public.

We leave a driver at the station for each truck to facilitate fire alarm response in the event a fire occurs while the men are on parade. The men on parade go directly to the fire.

The company furnishes the men with dress uniforms.

Cossie Day, Chief, Huntingburg, Ind.: I do not think an attempt should be made to eliminate Fire Department parades, for the public enjoys seeing them on parade and it helps to keep the public interested. I also believe it helps to keep men fit.

Should a fire occur while the men are on parade the parade is stopped immediately.

The men have to furnish their own uniforms.

H. S. Van Devanter, Chief. Leonardtown, Md.: It is not good to conduct parades wherein the men and apparatus are required. Absence of men and apparatus to answer fire calls is bad practice, especially in our town where only one chemical truck is available for use. The men in our department must furnish their own uniforms.

C. E. Straw, Chief, Pleasant Lake, Ind.: I do not think it wise to abolish Fire Department parades for it is my belief that it encourages the men to keep the apparatus and shop neat, and it also affords an opportunity for the people to view the apparatus when it is not in service. I believe it promotes public interest.

In most cities there is more than one company and in this way arrangements can be made to respond to alarms, should one be sent in when the department is parading.

Purchasing of uniforms depends upon the city. I believe it is a fine thing if the city does furnish the uniforms.

J. N. Ausenhus, Chief, Chloride, Ariz.: Fire departments should not participate in parades. The time occupied in parading should be devoted to drills, etc., for I believe "practice makes perfect."

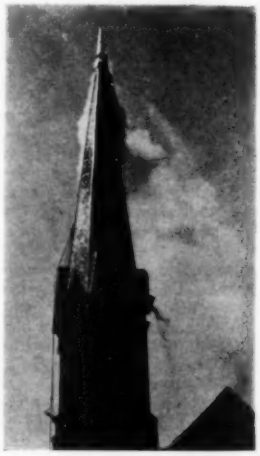
No measures are necessary to facilitate fire alarm response in the event of a fire occurring while the men are on parade, if the department does not take part. The department should be ready to go at all times.

The men in our department do not have uniforms.

Rutland Department Fights Church Fire

The Fire Department of Rutland, Vt., recently made a remarkable stop of a fire which started in the steeple of the First Baptist Church and threatened the destruction of the edifice.

The steeple is about 170 feet high and was being repaired by steeple jacks. Flames apparently originated on one of the platforms about twenty feet from the peak of the spire. Falling slate and boards endangered the firemen who worked under Chief A. H. Koltonski and Deputy Chief Ralph Bean.



Burning Steeple of the First Baptist Church, Rutland, Vt.

Apparatus in service consisted of two 750-gallon pumpers, one 75-foot aerial ladder, and one combination motor hose wagon, all American-La France. Two lines of 100 feet of 3 inch hose and 500 feet of 2½-inch hose were laid from Engine 2 to a ladder pipe on the aerial truck with a 1½-inch tip. A heavy wind broke the stream at times, so that only spray reached the fire. Engine 1 had one line of 100 feet of 3-inch hose and 700 feet of 2½-inch hose with a Y and two lines of 300 feet each of 1½-inch hose. Small hose was used inside the steeple. There were stairs as far as the belfry and then a ladder for about twenty feet. Above this the firemen had to climb up the beams and pull the hose after them. Damage was confined to the steeple.

HARRY BELKNAP.

Lieutenant Killed in Scranton Fire

Fire, caused by the use of a blow torch in an automobile paint and service station in Scranton, Pa., killed a Fire Department Lieutenant and injured eight firemen. They were caught when the building collapsed.

When the first company arrived, flames had spread from the station to a nearby residence and a four-family dwelling. A second alarm turned in five minutes after the first brought Chief Edmund B. Lewis. Six streams were used, but the fire gained great headway. The accident occurred at a time when the flames were under control. The men were on the second floor of the paint shop operating hose lines, when without warning, the sides of the building caved in, carrying the roof with it. The officer was found at the bottom of the pile, and was alive when taken out. He died at a hospital, shortly after being admitted.

John J. Sheedy, Superintendent of the Underwriters' Fire Patrol at Albany, N. Y., has recently made his semi-annual inspection of the 90,000 sprinkler heads in that city. During the inspection a short talk was given to the men at the plant being examined.

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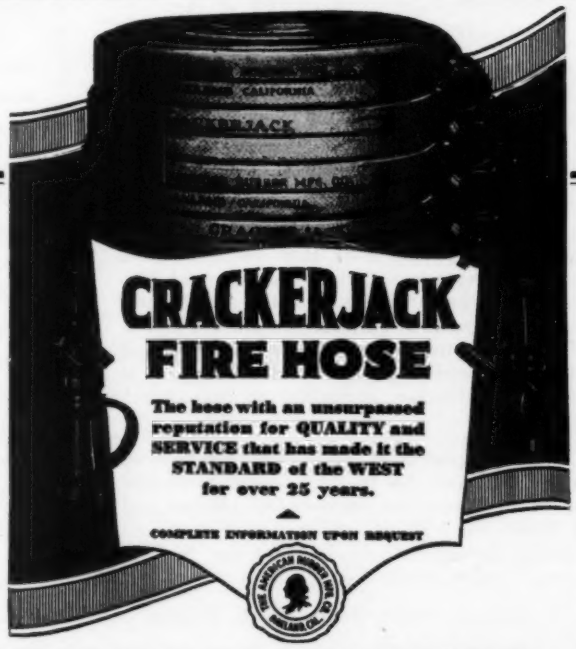
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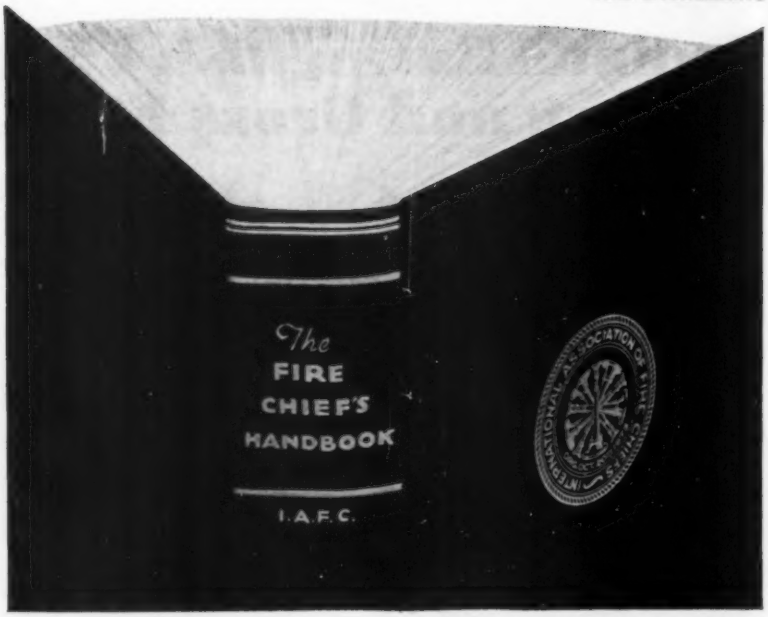

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Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Spontaneous Ignition in Print Works

To the Editor:

What recommendations would you make to eliminate fire from spontaneous combustion in a bleach, dye and print works?

What are the hazards of a machine shop and how would fire be eliminated from spontaneous combustion in same? R. E.

Answer 1: Fires caused by spontaneous ignition in bleach, dye and print works, are the results of oxidation of the iron mordants in cloths which have been recently printed. Frequently the goods, immediately after printing, are piled in a warm state. The oxidation of the iron mordants raises the temperature and spontaneous ignition results. To avoid fires, the goods should be run in the open air long enough to become cool and allowed to get rid of the heated moisture with which they are charged when they leave the hot cylinders after printing.

Answer 2: Principal fire hazards of a machine shop are the presence of lubricating oil, oily wastes, oil soaked floors, heating equipment for tempering, and other purposes, electric motors, powdered metals, and volatile inflammables used for treating metal parts after machining.

The precautions to be taken to prevent spontaneous ignition include the proper storage and destruction of oily wastes, provision of metal containers for rags and other combustible materials which may become oil soaked, and good housekeeping.

Open Butt Calculations

To the Editor:

Will you please send me the formula for finding the gallons per minute on a 200 foot, 2½-inch, hose line filling a basement, where the hydrant pressure is 70 pounds? What is the flow in gallons per minute?

C. F. R.

Answer: To solve for open butt pressures and discharges from open butts, the procedure is as follows:

Employ the Underwriters' formula:

$N.P. = E.P. \times (1.1 + K\ L)$.

Where engine pressure in the problem you cite would be 70 pounds; K, for 2½-inch hose with open butt, is 2.8; and L, the number of 50-foot lengths of hose in the line would be 4.

The nozzle pressure you so secure will be in pounds per square inch.

The discharge is found by the following formula:

$\text{Discharge (g.p.m.)} = 30 \times d \times d \times \sqrt{p} \times .80$

Where "d" is the nozzle diameter in inches, and "p" the open butt pressure in pounds per square inch.

The factor .80 is a factor used to find the actual discharge from an open butt after the theoretical discharge has been found.

If you will employ the above formulas, you will be able to secure the answer for this problem. Other problems involving open butts are worked in the same manner.

Dynamite and Stream Conductivity

To the Editor:

Would you please answer the following questions?

1. I understand that dynamite will not explode, except by concussion, but will burn. If this is true, what would be the result if a stream of water was directed on a box of burning dynamite?

2. Assume that an engine is pumping from a hydrant and the stream from the nozzle comes in contact with high tension wires. Will the current damage the magneto and coil of the engine? If so, will the ordinary house current of 110 volts do likewise?

R. L.

Answer: While it is commonly said that dynamite will not explode except by concussion, or shock, it would be extremely dangerous to direct water on a box of burning dynamite. When dynamite is afire it is well to leave it alone. While nothing serious may result from using water on dynamite, at the same time there is always danger where it is present and burning. Many an explosion has occurred in dynamite, the cause of which has not been determined.

With reference to the conductivity of fresh water streams when in contact with high tension wires, the amount of current which flows back through the streams is almost negligible and should not damage the magneto of the apparatus. Unless the high tension wires have fallen and the distance between the nozzle and the wires is very small, there is neither danger to the apparatus nor to the men operating the lines. In so far as 110-volt current is concerned, it would be impossible to conduct enough electricity through a line of hose carrying water from 110-volt circuit back to the magneto to affect it in any way.

Acids and Hose Lines

To the Editor:

I wish to have some information regarding the three questions mentioned below.

Question 1. Will the fumes from the acid (if stored in the same place as the fire hose) damage the hose?

Question 2. Which would be the more practical to run: two lines of 2½-inch hose, 300 feet each, to siamese and from the siamese to deluge set a 25-foot 2½-inch hose with 1⅜-inch tip, or run two lines of 2½-inch hose, 300 feet each with a 1-inch tip on each line?

Question 3. Should the booster tank be lined with lead? If so, for what reason? A. L. M.

Answer 1: Yes, fumes from acids will injure the fabric of fire hose where such hose is stored adjacent to the acid.

Answer 2: Both layouts would be practical. It is merely a question of what use you have for the streams. If you require considerable range and a large volume of water, the 1 3-8-inch tip would be the better; if you are operating at a residential fire or any other small fire requiring a comparatively small amount of water, the branch lines with the 1-inch nozzles would be more satisfactory.

Answer 3: Where booster tanks contain clean water, and without the addition of a non-freezing chemical, plain steel tanks are entirely satisfactory. Where calcium chloride is used to depress the freezing point of the water in the tank, corrosion will take place, though not to a serious extent. Lining the tanks with lead or with copper would make them far more resistant to the action of the calcium chloride.

Supply Lines for Pumper

To the Editor:

Assume when an engine arrives at a fire the booster line is to be used but the fire develops so that additional 2½" lines are required. While the engine is supplying the small line, a 2½"-line is run to a hydrant 300 ft. away to be used as a supply line for the engine.

I. Under these conditions how many 2½" lines would it be safe to run from the engine and with what size tips?

II. At what pressure would the hydrant water enter the engine? G. R.

Answer: The amount of water supplied to the engine, and, consequently the number of lines which the engine could in turn supply would depend entirely upon the hydrant pressure. With ordinary hydrant pressure, it would not be safe to figure on more than 2 lines from the engine, each equipped with 1⅛ inch nozzle.

It would require not more than 10 pounds at the intake side of the engine to furnish enough water to supply the two lines mentioned.

It is not good practice to use long hydrant lines of ordinary hose on the suction side of the engine.

Louisiana Firemen Re-elect Officers

All officers of the Louisiana State Firemen's Association were re-elected at the twenty-seventh annual convention held in Lafayette, September 8-10.

The delegates were welcomed by Mayor Robert L. Mouton and President R. A. Bogan, Chief of Baton Rouge responded for the association. Memorial services were conducted at the First Methodist Church.

A meeting was held at the court house where J. C. McEachern, of Haynesville, and Chief Felix Perez, of Rayne, spoke on the work of the State Firemen's College. The benefits of the school were stressed and all Fire Departments were urged to send at least one man to the school.

M. D. Doucet, Principal of the Southwestern Louisiana Institute Training School admitted that a large percentage of deaths by fire is due to lack of training during the formative years. He said that there should be fire drills in all schools.

R. P. Strong, Louisiana Rating and Fire Prevention Bureau, spoke on the value of the firemen's college.

R. J. Gregory, State Fire Marshal, spoke at the afternoon session. Walter Grant, Louisiana Rating and Fire Prevention Bureau, prepared a paper on "The Hazard Involved in Fighting Fires in Commercial Buildings," that was read in his absence; Chief John M. Evans, New Orleans, spoke on "The Use of Small Hose"; Jack Hall, Pontchatoula, "How to Maintain Interest in a Volunteer Fire Department."

Chief Rene Bernard, Thibodaux, led the round table discussion, and Chief A. O. Eastman, Jennings, presented a report as delegate of the I. A. F. C.

The last day of the convention was named "Roddy Day," in honor of Chief Frank Roddy, who for twenty-five years served as leader for the Monroe firemen. He was presented with a handsome gold badge as a gift of the association. The Monroe Fire Department Band took part in the program and marched from the convention headquarters to the court house where Mayor Arnold Bernstein of Monroe spoke in tribute to the service rendered his city by Chief Roddy.

The value of maintaining cooperation between the State Fire Marshal and the different Fire Departments of the state was stressed by R. J. Gregory, State Fire Marshal.

The firemen were the guests of the Rayne Fire Department at a banquet and entertainment program in Rayne. A barbecue was held at the Vermilion Bayou Camp, and a dance on Saturday night at the Elks Club. Special entertainment was arranged for the ladies including a theatre party, motor drive through the Teche country, and a card party.

Officers of the association are: R. A. Bogan, Baton Rouge, President; J. C. McEachern, Haynesville, Vice-President; Rene J. Bernard, Thibodaux, Vice-President; A. J. Bethancourt, Houma, Secretary; A. A. Hanson, Westwego, Treasurer; Felix Perres, Rayne, delegate to the San Diego, Cal., convention of the I. A. F. C.

The convention next year will be held in Monroe.

Newly Elected Chiefs

The following have been elected to head the Fire Departments in their respective municipalities:

Stonington, Conn.—Frank J. Shannon
Plaquemine, La.—Jules A. Hebert
La Feria, Tex.—Ben Neblett
West Union, W. Va.—Donald F. McNutt
Oceanside, N. Y.—John Denis
Minneapolis, Kan.—Tom Fetters
Salinas, Cal.—George Von Soesten
Mellenville, N. Y.—Richard Stickles
Maquoketa, Ia.—Harry Fischer
Martinez, Cal.—George Martin
Merced, Cal.—George Lady, Sr.

A new fire house is being erected in Two Rivers, Wis., to replace one now in use.

Early History of I. A. F. C. Recalled

Back in 1873, at a meeting held in Baltimore, the National Association of Fire Engineers was formed with John S. Damrell as the first President and Henry A. Hills as the first Corresponding Secretary. Mr. Hill held that office for four years and he was then chosen Corresponding and Recording Secretary. This office he held until he died in April, 1905.

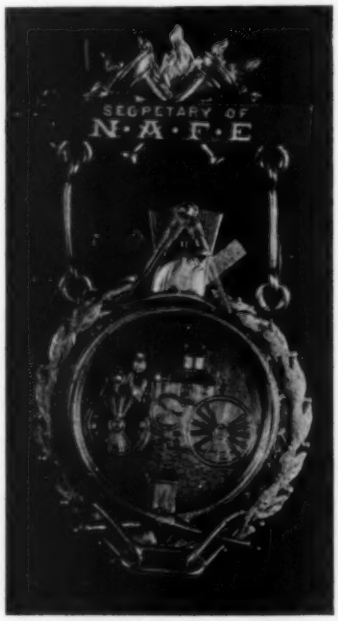
The Late Henry A. Hills

Mr. Hills had much to do with installing the fire alarm telegraph system in many parts of the United States. When he moved from Boston to Rome, Ga., he became Superintendent of the city water system as well as Fire Chief.

The photograph shows a medal that was presented to Mr. Hills at a convention held in Nashville, Tenn., in 1877.

This organization later became the International Association of Fire Engineers and a few years ago the name was modified to International Association of Fire Chiefs as many cities had changed the title of the Fire Department head from Chief Engineer to Fire Chief.

Fred M. Hills, son of the late Henry A. Hills, has his business office in San Diego. He is looking forward to meeting many of the chiefs. Because of his father, he recalls personally knowing a number of the old time chiefs, including Chief George C. Hale of Kansas City, who won many honors in Europe.



Medal Presented to the Late Henry A. Hills

Arson Plot Found in Yonkers, N. Y.

For the first time in the thirty-six years' history of paid Fire Department of Yonkers, N. Y., a charge of first degree arson was made in the local court.

A local quarry worker was held for setting fire to the home of his father-in-law where he had personal property that was covered by a $1,500 insurance policy in order to pay a loan. He sprinkled the porch with gasoline and set fire to it. In fleeing, he forgot to take the gasoline can which later caused the investigation that led to his discovery. In firing the porch, he endangered the lives of twelve persons who were asleep at the time.

Pine Village, Ill., is contemplating the purchase of fire apparatus.

Some time this fall, Richfield, Ohio, will vote on the question of buying fire apparatus.

The Dalles, Ore., will vote this fall on the question of purchasing Fire Department equipment.

A booklet on "Fire Prevention and the Insurance Agent," has been prepared for the field forces of the London Assurance Corporation.

The Safety Director of Berea, Ohio, has appointed John C. Nevel, Chief of the Fire Department. Chief Nevel is a pensioned Cleveland fireman.

1932—Your Opportunity

TODAY, when every municipal expenditure must be pared to the bone, the fire chief who advocates the Barton Centrifugal Fire Pump renders his community a genuine public service.

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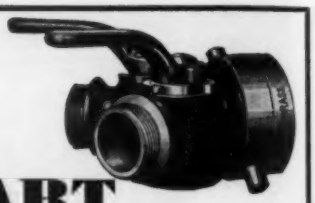

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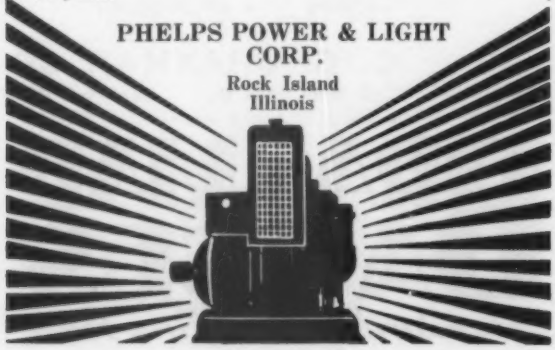

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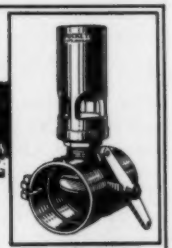

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I. A. F. C. ISSUES PROGRAM OF THE SAN DIEGO CONVENTION

Important and Interesting Papers and Practical Discussions on Fire Fighting and Prevention Will Feature the Gathering

FOLLOWING is the official program of the sixtieth annual convention of the International Association of Fire Chiefs, to be held at San Diego, Cal., on October 18 to 21. The convention headquarters are to be at the U. S. Grant Hotel and the meetings and exhibits at the San Diego Municipal Pier.

Tuesday, October 18, 9:00 a.m.
Registration—U. S. Grant Hotel

10:00 a.m.
Opening Session—Municipal Pier. (Memorial exercises, etc.)

2:00 p.m.-4:30 p.m.—Business Session
"Cooperation between Police and Fire Department," by E. E. Laffen, Chief Fire Department, San Bernardino, California.
"How Can the Fire Department Aid in Public Relief Work?" by E. F. Coop, Chief of Fire Dept., Pasadena, Cal. and H. E. Voshell, Chief of Fire Department, Indianapolis, Ind.
"Why the Increased Fire Loss?"
"Regulating the Dry Cleaning Industry," by H. E. Newell, Engineer, National Board of Fire Underwriters, New York City.
"Salvage Work—A Historical Review," by W. H. Gardner, Chief of Fire Patrols, Kansas City, Mo.
"Fighting the Oil Well Fire," by Frank Wilcox, Chief Fire Department, Culver City, Cal.
"Protecting Oil Tanks Against Fire," by L. A. Elsener.
Motion Picture Films on Fire Protection Subjects.

Wednesday, October 19, 9:00 a.m.—Business Session
Progress of the Educational Program of the International Association of Fire Chiefs, by Chief Ralph J. Scott, Chairman of the Educational Committee.

12:30 p.m.
Official photographs.
Banquet at Agua Caliente (Afternoon and evening at Agua Caliente, Mexico.)

Thursday, October 20, 9:30 a.m.—Business Session
"Maintaining Fire Department Efficiency," by Jay W. Stevens, State Fire Marshal, San Francisco, Cal.
"The Rescue Company—An Adjunct to the Modern Fire Department," by John J. McElligott, Chief Fire Department, New York City.
Round Table.

2:00 p.m.
Inspection of Exhibits and Demonstration—Municipal Pier.

Evening—Entertainment
Friday, October 21, morning
Final Business Session including election of officers and selection of next year's Convention City.

Chief Charles J. Brennan of San Francisco, Cal., was presented with an electric clock at a special meeting of the Board of Fire Commissioners. The gift was in recognition of the Chief's fifty-fifth birthday. The clock carries the inscription: "Presented to Chief Charles J. Brennan in recognition of his efficiency and loyalty to the Board of Fire Commissioners, 1932."

The volunteer fire company of West Brownsville, Pa., may lose its fire apparatus. The company treasury is depleted and no funds are available to meet a note for $2,026 past due on the apparatus. An appeal for aid was made to the Borough Council but the council has limited funds as the tax collections are below normal.

A large stock of kauri gum was destroyed recently by a fire in Auckland, New Zealand, and caused a loss of £60,000-£70,000. The blaze was discovered at 2 a.m. Due to the intense heat generated by the burning gum, it was impossible to fight the flames from the inside of the storage building.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the month of September. These figures, compiled from telegraphic reports are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending September 30	Loss in Thousands of Dollars
Wind Gap, Pa.—Finishing plant at Bolger-Heller Slate Co	125
Albany, N. Y.—Business building at State & Chapel Sts	25
Concord, N. H.—Church of St. John the Evangelist	25
Queens, N. Y.—Plant of La Cour Ironworks destroyed	80
Sparks, Nev.—Commercial Hotel, adj. property	30
New Orleans, La.—Charles Street property occupied by wholesale houses	30
Skaneateles, N. Y.—Summer home of O. E. Merrell	25
Honeoye Falls, N. Y.—Dann homestead destroyed	35
Marshall, Tex.—Rosborough Springs Hotel, 9 miles south	70
Clear Lake, Iowa—Tom Tom ballroom, West Second St	45
Sharon Springs, N. Y.—Bernstein Hotel destroyed	50
Lawrenceburg, Ind.—Plant of Rossville Commercial Alcohol Corp.	170
Elkton, Md.—Warehouse of Elkton Supply Co., adj. property	65
Fort Frances, Ont.—Several buildings of Mathier Lumber Co	80
Kane, Pa.—Six warehouses, garage and cattle pens	100
Ashland, Pa.—Ashland House and adjoining property	25
Thomasville, N. C.—Boyle's veneer plant destroyed	100
Toledo, Ohio—Y. M. C. A. building damaged	80
Gowanda, N. Y.—Plant of Gowanda Plow Works destroyed	150
Beemerville, N. J.—Lusscroft Meadow farm buildings damaged	25
Lafayette, Colo.—Three buildings destroyed	25
Waite, Me.—Five dwellings destroyed	25
Lexington, Ky.—Barn on Joseph Widener farm destroyed	45
Binghamton, N. Y.—Webster's drug store damaged	25
Henryetta, Okla.—Pharoah building destroyed	80
Canandaigua, N. Y.—Barns on M. I. Case farm destroyed	25
Elkin, N. C.—Dormitory of Mountain Park Institute destroyed	25
New Bern, N. C.—Property of Blades Lumber Co	25
Sacramento, Cal.—Warehouse of E. C. Horst destroyed	25
Oshkosh, Wis.—F. W. Woolworth building	125
Grassrange, Mont.—Mill and warehouse of P. W. Goetitz destroyed	35
Blackwood, N. J.—Four dwellings destroyed	25
San Francisco, Cal.—Candy factory of Varella Co	25
East Dallas, Tex.—Plant of Southern Premium Co. damaged	50
Windsor, Cal.—Post office, Odd Fellows bldg., adj. property	160
Grand Marais, Minn.—Gateway Lodge, Hungry Jack Lake, Superior Forest	25
Greenville, Tex.—Several business establishments destroyed	65
Carl Fork, Utah—150 dwellings and portion of Utah-Delaware mine	300
Ottawa, Ont.—Plant of Plaunt Hardware Co. damaged	25
Ramsey, N. J.—Feed mill and coal yard of E. R. La Roe	25
Morristown, N. J.—Six business establishments damaged	30
Pittsfield, Mass.—Farm bldgs. of F. Osborne on Sanborn Hill Rd.	30
Wausau, Wis.—Mill of Wausau Box & Lumber Co., destroyed	35
West St. John, N. B.—Property of St. John Harbor Commission	25
Rocky Hill, N. J.—Dwelling of W. A. Clark, adjoining property	25
Windsor, Cal.—Property in business section	165
La Grande, Ore.—La Grande high school buildi g destroyed	80
North Bay, Ont.—Mill of Temagami Timber Co	70
Walden, Colo.—Several business establishments destroyed	70
Chicago, Ill.—Garage of New Market Trucking Co	25
Danville, Va.—Residence of Thomas Cobb destroyed	65
Darien, Conn.—The Tokeneke Club destroyed	80
North Bergen, N. J.—Sawmill and adioining property	25
Klamath Falls, Ore.—Ellingson and White Pine lumber plants	80
Spragge, Ont.—Business and residential property, stock of McFadden Lumber Co.	375
Thessalon, Ont.—Property of Crane Lumber Co	250
Lemon Cove, Cal.—Kaweah Quarry plant, 3 miles north	80
Dalton, Mass.—Y. M. C. A. and Boys' Club building damaged	35
Rochester, N. Y.—Plant of Maxwell Gas & Oil Co	80
Forestburg, S. Dak.—Consolidated school building destroyed	25
Penticton, B. C.—Storage plant of Penticton Purity Products Co	60
Greensboro, N. C.—Library bldg. of Women's College, University of North Carolina	25
Houston, Tex.—First Presbyterian Church destroyed	80
Boyne Falls, Mich.—Mill of Hankey Milling Co. destroyed	25
Ridgely, Md.—Incubator houses of Summit Poultry Farm	65
N. Berwick, Me.—Slaughter house owned by R. S. Gragdon	30
Groveland, Mass.—Plant of Groveland Lumber Co	25
Walton, N. Y.—Mill and storage plant of Crawford Bros., adioining property	80
Miami, Ariz.—Storage plant of Texaco Oil Co. destroyed	160
Rockcliffe, Ont.—Car barns of Ottawa Electric Railway Co	25
Ottawa, Ont.—Cyr Hotel, Murray Street, damaged	25
Embrum Ont.—Bonville Hotel, adjoining property damaged	60
Birmingham Ala.—Butcher Tool & Hardware Co. store	35
Alexandria, La.—Plant of Martin Lumber Co. destroyed	25
Erma, N. J.—Consolidated school destroyed	85
Ford, Ky.—Five stores and adjoining property destroyed	25
North Bay, Ont.—Salidas store and adjoining property damaged	25
New York, N. Y.—Interborough Rapid Transit car barn and shops	125
Cooksville, Ill.—Five buildings destroyed	35
Greensville, Tenn.—Fry produce establishment destroyed	25
Denver, Colo.—Plant of Western Elaterite Roofing Co	25
Oxford, Md.—Business property destroyed	75
Yazoo City, Miss.—Mill of Lake George Lumber Co	35
Lowell, Mass.—Tenement property at 12 Madison Street	25
W. Ridgway, Pa.—Sweitzer Hall destroyed	25
Hagerstown, Md.—Hagerstown Country Club damaged	45
E. St. Louis, Ill.—Property of Mid-west Laundry Co	50
Baltimore, Md.—White Swan Laundry damaged	35
Wapato, Wash.—Plant of John Dower Lumber Co. destroyed	25
Orland, Cal.—Packing plant of M. L. Requa of San Francisco	35
Ottawa, Ont.—Devonshire apartments damaged	25
Kansas City, Mo.—Property of Milburn Golf & Country Club	50
Denholm, Sask.—Livery property damaged	25
Ellsworth, Me.—Two business blocks on Main Street	25

Chief Bower of Rome, N. Y., Resigns

After serving for nearly nineteen years as head of the Fire Department of Rome, N. Y., Chief George M. Bower has requested that he be placed on the pension list.

Chief Emeritus George M. Bower

He joined the department on July 1, 1881, when he became a torch boy for the Washington Hose Company No. 3. Later he was made foreman of a company of call men and served for six years until his promotion as a full paid fireman, May 14, 1903. Chief Bower took the civil service examination for Chief Engineer which led to his subsequent appointment as Chief on February 1, 1914. On June 30, 1931, Chief Bower observed his fiftieth anniversary as a member of the Rome Fire Department.

Chief Bower gave ill health as his reason for relinquishing his duties.

In acknowledging receipt of the letter of resignation, Mayor Reid wrote to Chief Bower:

"Our citizens have the deepest sympathy with you in your present affliction and hope for your speedy recovery.

"It is with reluctance your resignation is accepted, effective October 1, 1932. Rome will continue you on our honor roll as Chief of the Rome Fire Department, Emeritus."

Assistant Chief Harry W. Piggott, a member of the department for nearly twenty years, has temporarily been appointed Chief.

N. Y. Officers Offer Cut in Pay

A delegation of officers of the New York Fire Department called upon Mayor McKee and announced that the officers had agreed to take a voluntary pay cut of $250 a year each. This would slice $250,000 from the city budget. Should the uniformed firemen decide to take a proportionate cut, the city would save $1,300,000 a year. This amounts to a cut of about six per cent in all salaries in the department.

Wisconsin Fire Chiefs Meet

Seventy-five Chiefs attended the fourth annual convention of the Wisconsin Fire Chiefs' Association held in Appleton, September 14-15. President George Kuehlthau, of West Bend, presided.

E. E. Dunn, Jr., a member of the state Department of Vocational Education discussed the training of firemen through vocational schools. He said these schools are offering themselves to whatever service the fire-fighting profession might ask, and suggested that the Chiefs, either as a group or through a committee, outline a plan of education which might aid members of paid or volunteer departments.

Fred Van Liew, of Kimberly-Clark Corporation, Neenah, spoke at the second-day sesssion on "Fire Prevention in Industry." J. E. Florin, Madison, Superintendent of the State Fire Prevention Bureau discussed the inflammable liquid code.

At a banquet held at the Conway Hotel, high tribute was paid to Chief George P. McGillan of Appleton. Those who spoke at the dinner were Gustave Keller, Sr., John Roach, President of the Appleton Fire and Police Commission and Chief Peter J. Steinkellner, of Milwaukee.

At a regular meeting of the convention, Chief Steinkellner charged that politics played too great a part in the appointment of a Fire Marshal. He said this practice obviously tends to lower the efficiency of the department.

R. H. Drum, of Green Bay, was elected President; Harold Kohlman, Horicon, Vice-President; Arthur J. Rahn, Two Rivers, re-elected Secretary and James J. Kuplic, Manitowoc, re-elected Treasurer.

The next convention will be held in Wisconsin Rapids. Three ballots were necessary to select the convention city for bids were entered by Hudson and Rhinelander.

Groce Heads Washington Firemen

Delegates to the tenth annual convention of the Washington State Firemen's Association convention held in Yakima, Wash., August 25-28, urged rural areas to organize and purchase equipment specially designed to fight fires outside the city limits. Departments in all Washington cities would agree to house the apparatus and man it in case of fire, providing the rural areas would agree to let the equipment be used by the city in case of emergency.

The firemen were welcomed by Mayor W. W. Stratton in the Chamber of Commerce auditorium.

A plan was adopted for relief of firemen's widows and orphans. This provides for immediate payment of $500 on the death of the fireman. The fund will be replenished by assessment of members.

The Yakima Fire Department gave an exhibition in laying and handling fire hose.

W. A. Groce, Olympia, was elected President; Lyle J. Ficklin, Kalama, First Vice-President; L. L. Burgunder, Colfax, Second Vice-President; Charles H. Tracy, Arlington, Treasurer; H. S. Jenkins, Bellingham, Secretary, and William Ropes, Sedro-Woolley, J. W. Lewis, Yakima, R. A. Gilbert, Everett and E. R. Treese, Raymond, trustees.

Bellingham and Vancouver fought for the 1933 convention but the former city was selected.

The second and third days of the convention were devoted to the annual fire college. Speakers included Robert Rodgers, Battalion Chief, Seattle, and head instructor for the college; E. G. S. Pryor, Seattle, National Board of Fire Underwriters; E. Murray Blamford, San Francisco, member of the underwriter board; W. A. Groce, Olympia and Capt. Joe Cook, Seattle.

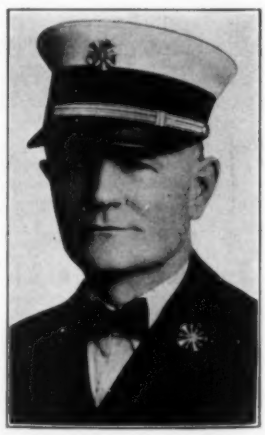
At a banquet of the association, C. C. Kaufman, Lynden, was presented with a retiring President's badge, Chief Ray Hare, Yakima, was given a pair of binoculars, and Capt. J. E. Bunce, Yakima, received a gift of a silver percolator. The association dance was held at the Hippodrome Park immediately after the banquet.

Chief Gardner Engaged in Civic Work

William H. Gardner, Chief of the Kansas City, Mo., Fire Insurance Patrol, has been appointed a member of the Police and Fire Committee of the Chamber of Commerce.

Chief Gardner was appointed by the Board of Fire Underwriters on September 30, 1919 as assistant to Chief John C. Egner, then head of the patrol. When he retired on October 30, 1930, Chief Gardner was named to fill the vacancy. He had served as a member of the Kansas City Fire Department from 1910 to 1919.

He is forty-three years old, is married and has a son and daughter. He is a member of the Chamber of Commerce, N. F. P. A., and the I. A. F. C.



Chief William H. Gardner

Detroit Has New Chief

Walter F. Israel is the new Chief of the Detroit Fire Department, succeeding Chief Michael Callahan. Although the change will officially take place on November 1, Chief Israel became acting head from October 1.

Chief Callahan resigned after forty-five years with the department. He said that he desired to make room for the younger men on the force.

Work is being completed on a new fire station in Manitowac, Wis.

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"Keeping Tab on the Sprinkler" is a booklet that explains how A. D. T. Central Station Sprinkler Supervison operates. Copy on request.

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Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry, Examination Questions, Fire Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

If you are studying for a promotional examination, you need this book, and if you are not studying for examination, this book will nevertheless give you a vast amount of valuable information on up-to-date fire methods.

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Questions and Answers for Battalion and Deputy Chief

A 210 page book, fully illustrated, by Geo. J. Kuss, Former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A valuable book, not only for candidates for examination for Battalion and Deputy Chief, but for every member of the department. The only book published which gives detailed methods of operating at large fires and the reasons for each move.

The following are a few of the important topics covered:

Detailed description of the proper procedure in fighting fires: 1. Size-up; 2. Calling of help; 3. Saving of life; 4. Covering exposures; 5. Extinguishing fire; 6. Overhauling. How to test motor fire apparatus. How the following types of fires should be fought: Large department stores, large hotels and apartments, motion picture film exchanges, tall office buildings, wholesale grocery stores area, residential fires, combination stores and rooming houses, large and warehouses, group building fires, theatres, schools, factories, etc., and considerable other data.

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A complete course of instruction in fire department hydraulics. Designed to prepare fire department officers for hydraulic questions in examinations, such as required of all ranks.

Contains over 150 problems in fire department hydraulics asked in examination in New York, Chicago, Milwaukee, Seattle, Newark, and a score of other large cities.

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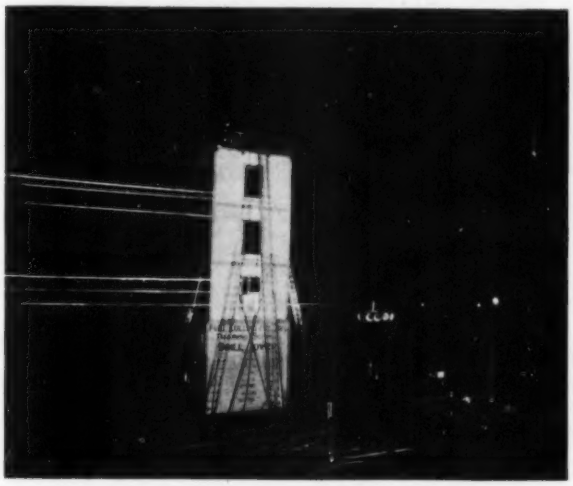
Fort Collins Firemen Put on Show

Firemen of the Fort Collins, Col., Fire Department, under the leadership of Chief T. P. Treadwell, performed at the department drill tower during an evening show arranged by the Kiwanis Club to raise money for local relief work.

The department, upon the discovery of a "blaze" answered first and second alarm calls, and then proceeded to climb



Illuminated Drill Tower Where the Exhibition Was Held

up the building with the aid of scaling ladders and other department aids. Rescues were made and various phases of Fire Department work exhibited. Chief Treadwell leisurely blew his whistle, and the men went through their part of the show without any confusion, nor was there any mishap during the breath-taking demonstrations.

Montana Firemen Hold School

A three-day short fire school, followed by the annual convention of the Montana State Firemen's Association was held in Billings, August 22-25. The second annual school was held under the auspices of the Montana State College with Prof. Leon D. Conkling, Director.

Mayor Fred L. Tilton welcomed the firemen, while Prof. Conkling outlined the course of study to be followed.

Chief Art J. Baker, Lewistown, spoke on "Cooperation Between the Public and Fire Departments." Thomas Lloyd, Board of Fire Underwriters gave a talk on "Fire Alarm Systems." E. C. Corbett, Yale Oil Corporation, discussed the control and extinguishment of gasoline and oil fires while D. S. Thomas spoke on the "Value of Sprinkler Systems."

W. M. Cobleigh, Dean of the Engineering Department, gave a talk on the fundamental chemistry of fires, at the second day of the school. He explained the chemical process of fire extinguishers, operation of sprinkler systems and the action of special extinguishers.

At the south side station, firemen were given actual experience in fighting a fire and salvaging the contents of a small structure that was set on fire.

The school closed with a banquet. Speakers of the evening were Mayor Tilton, Dean W. M. Cobleigh, Prof. Leon D. Conkling, Chief Henry Quane, Anaconda, President of the Montana State Firemen's Association, and others.

Lectures on the third day were given by W. G. Brooks, Helena, State Fire Marshal; W. L. Quirk and R. M. Hill of the Fire Companies Adjustment Bureau; William J. Jameson, local attorney; M. C. Rice and T. W. Shaffer of the Billings Fire Department, and Mr. Thomas.

Chief Henry Quane, Anaconda, President of the state association, presided at the state convention that was held following the short school. About one hundred persons attended, while seventy-three attended the school.

It was decided to hold the training school each year at Bozeman on dates to be decided by the faculty of the state college. This step segregates future short courses from the state convention.

Frank O'Malley, Glendive, was elected President of the Association; T. W. Carolyn, Forsyth, Vice-President and D. E. Moser, Bozeman, re-elected, Secretary-Treasurer. A. L. Quinn, Missoula, George Aitchison, Miles City, and Robert Thorburn, Billings, was elected to the Board of Directors. Henry Quane, Anaconda, R. G. Hibbard, Manhattan, and A. J. Trodick, Great Falls, were appointed on the Fire College Committee. The next convention will be held at Havre.

Firemen Injured at Armory Fire

For four hours fire raged through the historic Fifth Regiment Armory in Baltimore, Md., August 30, and before the flames were extinguished, about fifty fire companies and 380 firemen had responded. Seven firemen were injured and fifteen overcome by smoke. Firemen succeeded in keeping the flames from reaching 500,000 rounds of small arms ammunition stored in the east end of the building along with a small supply of 3-inch trench mortar shells. There were 150 hose lines in use and difficulty was experienced in finding a sufficient number of hydrants.

The fire started in a company storeroom and was discovered by a charwoman who was cleaning the first floor.

Smoke and flames became so dense in the basement that it was difficult to reach the heavier ammunition to move it to safety. Heavy bars in front of the windows hampered the work of the firemen. Firemen were forced to work in relays.

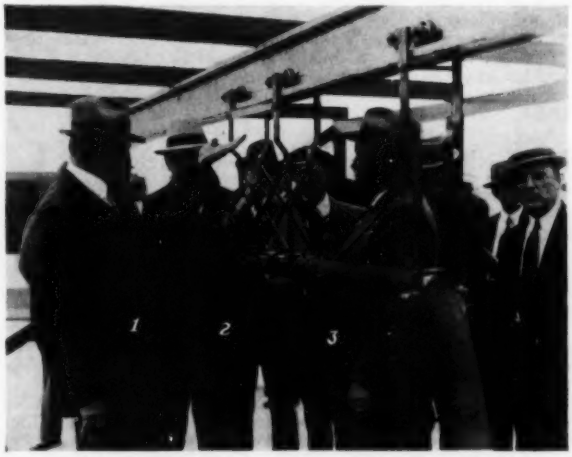
The blaze was confined to the storerooms and did not break out into the open.

New Pier Protection Device Tested

Many prominent Fire Department and fire insurance officials witnessed a test of the Conran Monorail Nozzle at the Battery, New York City, which was designed to combat such fires as destroyed the Cunard Pier in New York while the Fire Department was powerless to fight the under-pier blaze.

The Conran device was shown on a minature scale on the dock. A typical, but modified size of a cross section of a pier was built on the wharf adjoining the fireboat "John J. Harvey."

On an I-beam, was suspended a trolley arrangement on spools which ran along the flanges of the I-beam. This trolley carried twenty-five outlets for the water spray. The trolley was connected to a hose line which was also used to advance the distributor under the pier or to draw it back. The I-beam is designed to be a permanent part of the pier to be protected. The fireboats would carry the trolley



Officers Inspecting the New Protection Device

1—Fire Commissioner John J. Dorman; 2—Chief John J. McElligott of the New York Fire Department, and 3—William Conran of the Conran Standpipe Company.

harness containing the distributor and upon arriving at a dock fire, just slide the wheels in and along the I-beam. The distributor is sent ahead by feeding in the charged line.

A new automobile has been placed at the disposal of Chief William Woehler of Akron, Ohio, to take him to fires.

Fire Prevention Booth at State Fair

Chief Harry E. Voshell of the Indianapolis Fire Department, and Chief Bernard A. Lynch of the Division of Fire Prevention, arranged a Fire Prevention Booth, at the State Fair Grounds, September 5-9, which was inspected by nearly 50,000 persons.

The exhibit was housed in a tent which had a seating capacity of 360. The front part was used to display 31 major fire hazards in the home.

Twelve fire prevention films, obtained from various parts of the country, were projected continuously from 9 a.m. to 10 p.m. At intervals, there were lectures on home inspection by Chief O'Brien and Chief Lynch. Inspector Gebhart demonstrated the proper way to turn in an alarm using the fire alarm box or the telephone.

Indianapolis Fire Prevention Booth

The display was arranged by members of the department; exhibits were loaned by merchants of the city, and the space was donated by the State Board of Agriculture.

Iowa Firemen Convene in Chariton

The fifty-fifth annual convention of the Iowa Firemen's Association was held in Chariton, Ia., September 20 and 21. The main part of the program consisted of contests, demonstrations, a parade, stag barbecue and prize fights. There was an estimated attendance of between ten and twelve thousand persons the first day of the convention.

The new officers are J. J. Lynch, Vinton, President; C. A. Stephenson, Red Oak, First Vice-President; William West, Boone, Second Vice-President; Dolph Becker, Oelwein, Third Vice-President, Vincent Pyle, Chariton, Fourth Vice-President; Paul A. Soener, Independence, Secretary and W. L. Allan, Ames, Treasurer.

The 1933 convention will be held in Denison, September 19-20.

Illinois Firemen Meet in Decatur

Building inspections and fire prevention topics had important parts on the program of the Illinois Firemen's Association held in Decatur, September 13-15.

The association was welcomed by Mayor O. W. Smith, and President Haderlein spoke for the organization. In the evening the firemen were entertained at the Elks Country Club.

George Anderson, First Assistant State Fire Marshal, took the place of S. L. Legried, Fire Marshal. He urged every city to have a zoning ordinance and urged cooperation between the state department and Fire Chiefs.

H. W. Langer, Engineer, Underwriters' Laboratories, Chicago, spoke at the afternoon session. The talk by Chief Knol, of Cicero, was on cooperation of the public in fire prevention matters. Chief J. W. Just, Fire Department Instructor for the Illinois Inspection Bureau, spoke on "Inspections and its Relations to Fire Fighting."

There was considerable discussion on the question of making outside runs. Legislation was urged that would provide a uniform plan for extending aid and for making charges.

Chief E. Archbold, Centralia, President of the Egyptian Fire Fighters' Association stressed that Chiefs should sell their department to the public.

Frank C. McAuliffe, Chief of the Chicago Fire Insurance Patrol, discussed the question, "Is Training a Necessity?"

Dr. David J. Price, of the U. S. Bureau of Chemistry and Soils, scheduled to speak on dust explosions, was unable to be present.

The new officers of the association are Joseph Valentine, Assistant Chief, Rock Island, President; Frank J. Rutkowski, Steger, First Vice-President; Roy W. Alsip, Champaign, re-elected Secretary; Simon Kellerman, Jr., re-elected Treasurer; Elmer W. Weidler, Mt. Olive, re-elected Historian.

The next convention will be held in Rockford.

Railway F. P. Association to Meet in October

The 19th annual convention of the Railway Fire Protection Association is to be held at the Hotel Cleveland, Cleveland, Ohio, on October 18 and 19. The topics connected with fire prevention to be discussed are as follows:

"Snow Melting Oil and Handling of Gasoline" Committee Report.
"Gasoline and Electric Motor Trucks in Freight Depots and Terminals" Committee Report.
"Stations, Freight Depots and Warehouses" Committee Report.
"Merchandise in Transit" Committee Report.
"Industries on Railroad Rights of Way" Committee Report.
"Freight Car Heaters and Refrigerator Cars" Committee Report.
"Housing of Employes" Committee Report.
"Incinerators" Committee Report.
"Fire Losses in Rolling Stock" Committee Report.
"Natural Gas and Gasoline Pipe Lines on Railroads" Committee Report.
"Shop Plants" Committee Report.
"Coaling Stations" Committee Report.
"Bridges & Trestles" Committee Report.
"Fire Alarm Signalling Systems" Committee Report.
"Pyroxylin Lacquers and Finishes" Committee Report.
"Hazards Surrounding the Handling, Transportation and Storage of Cotton by Railroads" Committee Report.
"Motor Transportation" Committee Report.
"Air Compressors" Committee Report.
"Fuel Oil" Committee Report.
"Storage of Records" Committee Report.

Larchmont, N. Y., Holds Review and Parade

The annual inspection and review of the Larchmont, N. Y., Fire Department was held on the evening of Thursday, September 8. The parade formed at 7:30 p.m., under command of Chief George S. Towle, the following units being in line: Hook & Ladder No. 1, 31 men; Engine Company No. 1, 30; Fire Company No. 2 (hose), 45; Patrol Company, 25 and Ambulance Company, 4, a total of 135 men. The apparatus of the various companies followed. The visiting officials and Chiefs marched near the head of the procession. The men of the department made a natty appearance and marched with military precision.

At the conclusion of the parade there was a review by the visiting officials and an inspection in front of Fire Headquarters, after which the department and guests proceeded to the Larchmont Shore Club, where a dinner was served.

Among the guests present were:

Mayor Munroe Stiner, of Larchmont; Mayor Henry Gedney, Mamaroneck; Chiefs Donald Howe, Weaver Street Fire Department; Domenick Samela, Mamaroneck; James N. Sullivan, Greenwich, Conn. (First Vice-President, Westchester Fire Chiefs' Emergency Plan); Victor H. Veit, Stamford, Conn.; Theodore Cuthouse, Ossining (Director, F. C. E. P.); James A. McCullough, Port Chester (Director, F. C. E. P.); Michael Carroll, Harrison; John Fremd, Rye; Ex-Chief Robert Lemon, Mamaroneck. (Director, F. C. E. P.); Deputy Chiefs Oscar Grab, New Rochelle; Nelson Rundlett, Pelham Manor; Gus Burrell and P. Schneech, Harrison; Costello, Langeloh, Rye; Trustees, Larchmont, Walter Watkins, Frank Massam, W. Roy Manny and Albert B. Wiemann; and Robert H. Lockwood, Associate Editor, FIRE ENGINEERING.

N. J. Chiefs Re-Elect Officers

The New Jersey Fire Chiefs' Association, at its annual meeting held in Atlantic City, N. J., September 17, re-elected its officers.

The officers are Charles W. Greenfield, Arlington, President; Charles Nickerson, Wildwood, Vice-President; Fred A. Trowbridge, Morristown, Secretary; George L. Mitchell, East Orange, Treasurer.

Gamewell Moves Boston Office

The New England office of The Gamewell Company which was located at 1022 Commonwealth Avenue, Boston, has been moved to 1238 Chestnut Street, Newton Upper Falls, where it occupies more spacious quarters. A. D. Wheeler remains District Sales Manager and no change has been made among the personnel of the sales engineers.

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Always Ready for Instant Use

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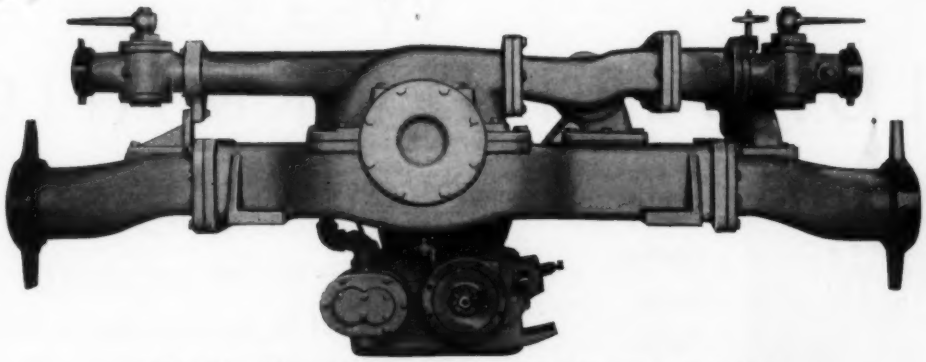

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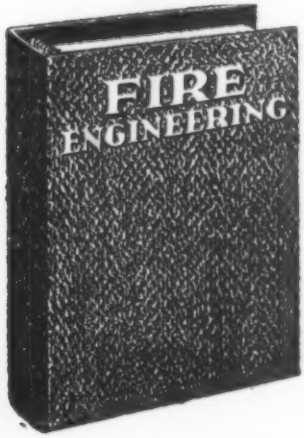

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THE FIGHTING OF FIRES WHICH INVOLVE CHEMICAL HAZARDS

This Instalment Deals with Chemical Hazards from Liquids (Continued)—Oils and Flammable Liquids — Dangerous Solids

By Lionel K. Arnold
Assistant Chemical Engineer, Engineering Experiment Station, and
Lindon J. Murphy
Municipal Engineer, Engineering Extension Service, Iowa State College

For the accompanying article, the ninth installment of which is published herewith, FIRE ENGINEERING *is indebted to the Official Publication of the Iowa State College of Agriculture and Mechanic Arts, it being comprised in Bulletin No. 9, Engineering Extension Service:*

Chemical Hazards from Liquids

Oils and Flammable Liquids (Continued)

Acetates. There are many volatile solvents such as amyl and butyl acetates which present serious fire and explosion hazards. Those used in the pyroxylin lacquers are especially dangerous since the lacquer is usually applied by spraying. This allows diffusion of the material in air presenting hazards similar to dust clouds. The pyroxylin base is made up from nitrocellulose which is an additional fire and fume hazard. These solvents and lacquers are common in paint shops and garages. All spraying should be done in an approved booth equipped with automatic sprinklers. Foam, soda-acid extinguishers, and water are very effective on fires in this material.

Carbon disulphide is a highly volatile, colorless, explosive liquid with a disagreeable odor. It is shipped in cars and drums and is used as a rubber solvent, in rubber cements, as solvent in oil extraction and surphur using plants, in dye plants, in ice manufacture, and as an insecticide. One of its comonest uses is in grain elevators and seed elevators for destroying weevil.

Other Liquid Chemicals

Sulphur subchloride is an amber to yellowish-red oily fuming liquid with a penetrating and irritating odor. It is shipped and stored in jugs, carboys, and drums. It is used in the production of rubber, insecticides, and textiles and in purifying sugar juices. Sulphur dichloride is a reddish-brown liquid shipped in iron drums and used for the purposes similar to the sub-chloride. In the presence of water the sulphur chloride fumes hydrolize to form acid fumes which are very irritating and dangerous. The more water used on these materials the worse the fumes. Leaking containers of the chlorides should be taken to a dump and allowed to diffuse slowly into the air.

Mercury, a metal which is a liquid at ordinary temperatures, is used in manufacture of mirrors and is found in barometers, thermometers, and many recording and control instruments used in power plants and factories. When heated mercury volatilizes forming a very poisonous vapor. Inhalation of mercury vapor in dangerous amounts is usually indicated by a feeling of fullness just back of the bridge of the nose very similar to the feeling when bumped on the nose. A person affected by mercury vapor should get into the fresh air at once and have a physician called.

Bromine is a low boiling liquid, volatilizing to give heavy reddish-brown vapors. It is shipped and stored in glass or earthenware bottles or in glass carboys as a solution in water. It is used in various chemical industries. In contact with organic matter bromine may produce a fire. The poisonous and irritating action of its vapor is similar to that of chlorine. The liquid is corrosive.

Dangerous Solids

Alkalis

Ordinary quick lime frequently becomes hot enough upon wetting to ignite wood and similar materials. Since it is usually shipped and stored in wooden barrels or in bulk in contact with wood, it should be kept dry if possible. Hot slaking lime will cause bad burns if allowed to come into contact with the skin.

Sodium hydroxide (caustic soda or lye) and **potassium hydroxide** (caustic potash) behave similarly to lime. They are ordinarily shipped and stored in metal cans and drums.

Metals

Sodium and Potassium. These two metals, which are very similar chemically, decompose water upon contact with it, igniting, with explosive violence, the hydrogen which is formed. The sodium or potassium is frequently scattered over a considerable area. These metals are shipped and stored in air-tight tin cans or under kerosene in cans or bottles.

Magnesium is a very light inflammable metal being particularly dangerous in the powdered form. It is used largely by photographers and in fireworks manufacture. When in contact with water, hydrogen is evolved, so that water must be kept away.

Aluminum and Bronze Dust. Aluminum dust forms an explosive mixture with air. Water should not be used in case of fire as it may cause an explosion. Bronze dust containing aluminum dust is dangerous. Bronze dust, however, is usually free from aluminum dust and is not considered dangerous.

Oxidizing Materials

Oxygen causes more rapid burning and if present in sufficient quantities may cause an explosion. In contact with organic materials it may ignite them. This same action is caused by certain compounds high in oxygen. Nitric acid has been mentioned. The chlorates and perchlorates such as sodium chlorate, sodium perchlorate, potassium chlorate, potassium perchlorate, ammonium perchlorate, barium chlorate, and zinc chlorate; the nitrates of most elements, especially sodium and potassium nitrates; and the peroxides are all likely to cause explosions in contact with alcohol, ether, and similar materials, and when heated with any organic matter. Ammonium nitrate may be exploded by detonation. The peroxides are explosive when in contact with water. Water may be used on the other oxidizing materials.

Waxes, Greases, and Similar Materials

Solid greases and **waxes** present less of a fire hazard than the oils but when heated may give off explosive fumes. Since the melted waxes and greases are readily scattered by water, carbon tetrachloride or the foam type of fire extinguishers are most suitable for fighting these fires. Other solid materials such as camphor, borneol camphene, rosin and naphthalene give off inflammable vapors when heated.

(*To be continued*)

New York Permanent Firemen Meet

Charles W. Swartz, Buffalo, was advanced to President of the New York State Permanent Firemen's Association, at the fourteenth annual convention held in Oneonta, N. Y., August 28-30.

The convention opened with 150 delegates present. Memorial services were held for thirty-two members who died last year.

The visitors were entertained by an automobile trip to Cooperstown, a clambake and a convention ball. The convention closed with a banquet. A number of interesting papers were presented at the various sessions.

The convention went on record as being opposed to salary cuts or curtailment of fire service. In some cases six or eight men, it is said, have been called upon to do the work of ten or twelve men.

Frank Emden of Utica was re-elected Secretary-Treasurer. The Executive Committee is to meet in Albany and at that time they will select the 1933 convention city.

Hasselhuhn Heads N. J. Firemen

Chris H. Hasselhuhn, Carlstadt, was again elected President of the New Jersey State Firemen's Association, at the fifty-fifth annual convention held in Atlantic City, N. J., September 16-17.

Resolutions were adopted providing for a ten per cent reduction in salaries of officers.

Other officers elected are William Exall, Newark, Secretary; Charles E. Burr, Bordentown, Treasurer; Evan Benners, Moorestown, First Assistant Secretary and Ralph Holman, Second Assistant Secretary.

Incendiary Plant Found at Fire

Firemen of a Fort Collins, Col., fire company, that was the first to arrive at a garage fire, found an incendiary plant on a work bench when they succeeded in opening the double-sliding doors.

Incendiary Plant Found

The blaze was consuming rags on a work bench and had begun to travel up a board partition to which the bench was fastened. A battery charger was in operation at the rear, and directly over this bench. The master electric switch was located to one side of the charger. This switch was pulled by a fireman but although this served to cut off the entire current in the building, it did not stop the sparking on the bench. This aroused the suspicion of the Lieutenant in charge.

He noticed a queer device fastened to the partition, directly over the fire on the bench. He hesitated to turn on the water of the hose line. However, he opened the nozzle slightly to prevent washing anything away. Chief T. P. Treadwell arrived at this point and took charge.

It was found that the plant consisted of an alarm clock, a mouse trap, a Ford coil, a six-volt storage battery, and a complicated hook-up to produce a spark at a spark plug which was resting beneath a pile of gasoline saturated rags. On a bench was a one-half gallon can of gasoline.

Before the men were ordered back to their house, they were shown how the device worked so as to be on the alert for incendiary plants at other fires.

CORRESPONDENCE

Water Heated by Booster Pump

To the Editor:

In a previous issue of FIRE ENGINEERING, there is published on the Question and Answer page, the question of what causes water pumped from a booster tank to heat to such a degree that it could not be easily handled at the nozzle.

My opinion is that after the nozzle is shut off, the water is caused to churn in the pump and the churning causes friction which heats the water.

We have a new type 75 American-LaFrance. This type has a positive type circulation system which might cause water to become heated more than on the older type pumper.

When we go to small fires and keep the nozzle shut on the booster tank, more than normally, the water becomes pretty hot.

Yours truly,

S. M. BYRD,
Baton Rouge, La.

Chief Pierce of Kearny, N. J., Dead

Knowlton F. Pierce, fifty-three years old, Chief of Fire Department, Kearny, N. J., since 1921, died at his home in Arlington following an attack of acute indigestion on September 29.

He went to a small fire at 10:30 p.m., and then returned to a meeting of a society in Arlington. Chief Pierce reached his home after midnight and retired. At one o'clock in the morning he complained that he was ill and he went downstairs. His wife found him, at 1:30 a.m., seated in a living room chair. A doctor was called immediately, but when the physician arrived, he pronounced Chief Pierce dead.

Chief Pierce was active in the affairs of the New Jersey State Fire Chiefs' Association. For many years, he attended the annual conventions of the I. A. F. C.

Berkeley Issues Fire Prevention Code

A comprehensive fire prevention code which became effective in Berkeley, Cal., July 1, 1932, has been issued in booklet form. The code defines the duties of the Chief and goes into detail concerning the regulations for flammable liquids, explosives, motion picture machines and nitrocellulose products, lacquers and other combustible materials. The booklet has a thorough cross index so that it is not difficult to find a particular section.

Refuses to Lease Fire Department

An unusual suggestion has been received by the City Commissioners of Jacksonville, Fla., and promptly turned down.

The Commissioners were invited to consider a proposal to lease the Fire Department to an unnamed party for private operation. The applicant believed that the department could be operated privately at a lower cost.

Chicago Suffers $6,000,000 Loss

Fire which started at 3 p. m., recently in a grain elevator, supposedly from a grain dust explosion, destroyed the Quincy Grain Elevator and most of the plant of the Omaha Packing Company.

Flames spread with great rapidity. Embers showered down on wooden pens, west of the packing plant, and in spite of the work performed by the employees, the pens were soon ignited. Fire spread eastward on a front a block wide. The last building attacked was used as an office by the packing company.

During the afternoon, the flames spread to yards of nearby coal companies and to the south side of the river they burned a $20,000 yacht and a $5,000 fishing boat.

Two employees of the packing plant were rescued late in the evening, overcome by an explosion in the engine room. They had risked their lives to turn off the ammonia flow. Firemen wearing gas masks carried them out.

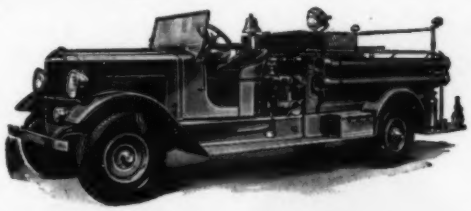
At 10 p.m., it was announced that all buildings in the vicinity were safe.

Perishing in the flames were 800 hogs, 60 heads of cattle,

Fire in Grain Elevator and Packing Plant, Chicago

200 sheep, all overcome by smoke in the early stages of the fire. In addition, the loss included 2,500 hog carcasses in the cooling room of the adjoining warehouse, 2,500,000 pounds of ham and bacon, and 300 tons of fertilizer.

The elevator owned by the Burlington R. R., and operated by another company under a lease, contained 786,000 bushels wheat, 45,000 bushels corn, 40,000 bushels oats. The present market value of the grain was placed at $560,000 and that of the elevator $1,000,000. The loss to the packing company was estimated at $5,000,000.



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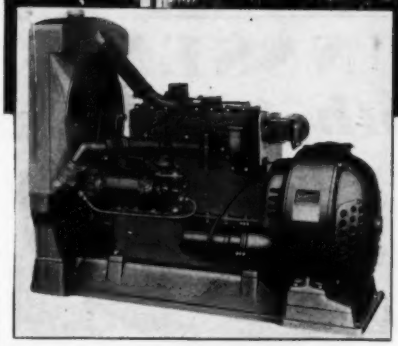

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For fire department service, we recommend our 5 KW, 115 volt, D.C. unit, with a net weight of approximately 700 pounds; or our 6 cylinder, 10 KW unit, weighing slightly more. All units are built to meet your special requirements.

More detailed information will gladly be sent you on request.

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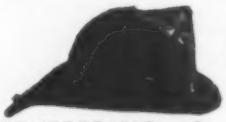

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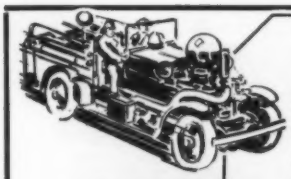

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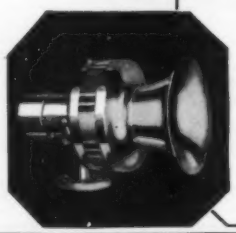
FREE TRIAL

We will furnish it complete with cord, switch and mounting bracket for 15 days FREE TRIAL. Merely tell us you want it and we will ship it C.O.D. If at the end of the 15 days you feel otherwise, just send it back and your money will be refunded and no questions asked.



FEDERAL ELECTRIC CO.
8702 South State Street
Chicago, Illinois
FEDERAL SIRENS

BRUNSSEN'S
Cloth CAPS

MADE IN TWO QUALITIES
$1.75 and
$2.25
Parcel Post Paid

GEORGE BRUNSSEN CO., INC.
92-96 Bleecker Street New York City

HEWITT-GUTTA PERCHA
FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose

Manufactured by
HEWITT - GUTTA PERCHA
RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

Quick Acting Reliable

Anderson-Hale Improved

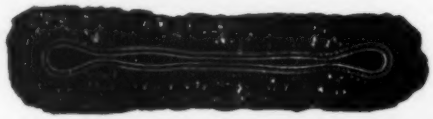
FIRE STATION DOOR OPENERS

Over 1,300 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening. Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.
Mfrs. Motor Fire Equipment and Fire Supplies
Kansas City, Kansas

Bi-Lateral Fire Hose



The one hose that does not require frequent replacements. Always reliable for fire service no matter how old, if the jackets are intact.

Lined with three rubber tubes, specifically guaranteed for six years.

BI-LATERAL FIRE HOSE CO.
15 Park Row New York, N. Y.
20 N. Wacker Drive Chicago, Ill.

Saves time -*and costly hose*

No. 1. (Capacity 3 to 7 tons; weight, each, 72 lbs.)

No. 2. (Capacity 3 to 12 tons; weight, each, 118 lbs.)

Complete information and Prices on request.

It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.

Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars.

Wausau Fire Hose Protector Co.
1520 Harmon Place, Minneapolis, Minn.

Hedberg Super Sirens
"The World's Best by Test"

offer the world's greatest and most versatile range of choice involving sizes and methods of operation.

Write for descriptive matter showing sirens that have never lost in competition.

J. N. HEDBERG
321-49 W. REED ST.
SAN JOSE CALIFORNIA

POSITIONS WANTED

These advertisements are inserted without charge as a service offered by FIRE ENGINEERING to everyone in the fire field. Use it.

Inspector

Age 37 years. Married. 16 yrs. service in paid Department of city with 38,000 population. Years of prevention and inspection work. Officer. Office and some mechanical experience. Efficient driver. Accept any reasonable offer in any location. Best reference. Address: Box 685, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
9-10

Fireman

Wishes position as Fire Inspector or Fire Marshal in factory. Three and one-half years experience. Available at once. Location anywhere in U. S. Address: Box 670, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
9-10

Fire Protection Engineer

Young fire protection engineer from Armour Tech desires position as insurance inspector. Has had analytic rating and electrical inspection experience. Address: Box 700, c/o FIRE ENGINEERING, 24 W. 40th st., New York.
10-11

Salesman

Fire Apparatus Salesman, well acquainted, consider any propsoition, also expert delivery engineer. Submit proposition in detail. Address: Box 680, care FIRE ENGINEERING, 24 W. 40th St., New York City.
9-10

Fire Chief

I have eleven years experience in the fourth largest city in the U. S. and a thorough knowledge of all the latest methods of fire fighting. I am thirty-two years of age and married. Will go anywhere in U. S. or Canada. References sent on request. Address: Box 690, c/o FIRE ENGINEERING, 24 W. 40th St., New York.
10-11

Fire Chief

13 years' experience, 32 years old, married, mechanic. Fire Alarm knowledge, Fire College graduate. Very best of references. Address: Box 695, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
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Buy or Merger

A company manufacturing fire department equipment is interested in buying outright or merging with a similar company. If interested send reply to Box 675, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
9-10-11

PROPOSED IMPROVEMENTS

Wiscasset, Maine—At special town meeting it was voted to purchase new $5,000 piece of fire equipment. Wm. B. Lewis, Chief of Fire Dept., on committee in charge.

Patchogue, N. Y.—According to reports village board interested in installation of fire alarm system.

Easton, Md.—Mayor Hopkins appointed a building committee to make plans for erection of a new fire engine house for the Easton Vol. Fire Dept.

Topsfield, Mass.—At recent town meeting town voted $10,000 for purchase of pumper for the fire dept.

Avoca, Iowa—City council may consider purchase of pumper for fire department, according to reports.

Yakima, Wash. — City commission may call special election to vote on $40,000 bond issue for installation of fire alarm system.

Harrison, N. Y.—Petition presented to town board asking for special election to vote on proposition of purchasing new fire truck at estimated cost of $12,000. Michael Carroll, Chief of Fire Dept.

CONVENTION DATES

Oct. 18-19—RAILWAY FIRE PROTECTION ASSOCIATION. 19th Annual Convention, Cleveland, Ohio. Secretary-Treasurer, R. R. Hackett, 601 Baltimore & Ohio Bldg., Baltimore, Md.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 50th Annual Convention, Falls City, Neb. Secretary-Treasurer, Fred. W. Muller, Norfolk, Neb.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 60th Annual Convention, San Diego, Cal. Convention Headquarters, U. S. Grant Hotel; Meeting and Exhibits, San Diego Municipal Pier. Secretary-Treasurer, Ex-Chief James J. Mulcahey, 16 Franklin Avenue, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief W. S. Minter, Long Beach, Cal.

Oct. 18-21—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Convention during Convention of International Association of Fire Chiefs, San Diego, Cal. Secretary-Treasurer, Chief Ray Tiller, Waterloo, Ia.

Oct. 10-12—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. 5th Annual Convention to be held at Houston, Tex. Secretary-Treasurer, J. F. Taplin, Blackwell, Okla.

Nov. 17—NEW JERSEY MUNICIPAL SIGNAL ASSOCIATION. Next Monthly Meeting, Long Branch, N. J. Address E. M. Weafsey, 634 Monroe Ave., Elizabeth, N. J.

Jan., 1933—SOUTHERN CALIFORNIA FIRE CHIEFS' CLUB. Semi-annual Meeting. Secretary-Treasurer, Chief Charles E. Smith, Chula Vista, Cal.

May, 1933—DEL-MAR-VA VOLUNTEER FIREMEN'S ASSOCIATION. 4th Annual Convention, Easton, Md. (Exact date to be decided later.) Secretary, A. C. Bailey, Laurel, Del.

June, 1933—KANSAS STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATIONS. Conventions to be held at Wichita, during month of June. Also during June Associations will conduct ten one-day fire schools in ten different towns; first one in Seneca, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

June, 1933—NORTH DAKOTA FIREMEN'S ASSOCIATION. 49th Annual Convention, Carrington, N. Dak. (Exact date to be decided later.) Secretary, H. L. Reade, Bismarck, N. D.

June, 1933—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Carbondale, Pa. Secretary Fred Zeiser, Shamokin, Pa.

June 5-7, 1933—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 11th Annual Convention and Fire College, Las Cruces, N. M. Secretary-Treasurer, T. A. Rosenwald, Albuquerque, N. M.

July, 1933—WEST VIRGINIA STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Morgantown, W. Va. (Exact date to be decided later.) Secretary, Chief C. J. Powell, Romney, W. Va.

July 18-19, 1933—MARITIME FIRE CHIEFS' ASSOCIATION. 19th Annual Convention, Digby, N. S., Can. Secretary-Treasurer, Captain Kenneth J. MacRae, Puggsley Bldg., St. John, N. B.

Chief Sullivan Has Silver Anniversary

Joseph N. Sullivan, Chief of the Utica, N. Y., Fire Department and Past-president of the International Association of Fire Chiefs, rounded out twenty-five years as a firefighter. When he joined the city had thirty-two horses to pull ten pieces of apparatus. The present department has a personnel of 188 men.

New County Fire Association Formed

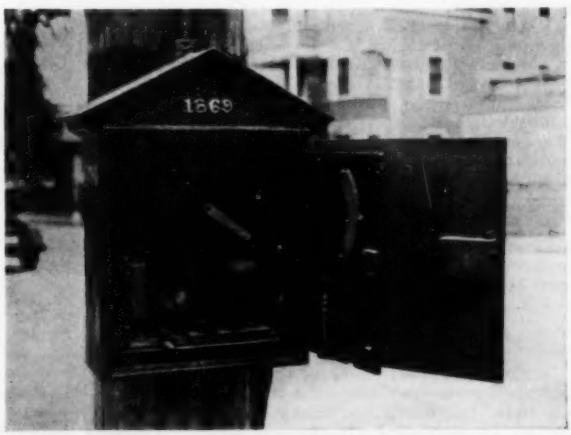
Fifty-six representatives from eleven fire departments of the county met in Los Gatos, Cal, to form the Santa Clara County Firemen's Association. A temporary organization has been formed with Chief Jack Sullivan, Los Gatos, Chairman, and Cecil Hooten, Los Gatos, Secretary.

Elmer B. Anderson, Salinas, a representative of the State Firemen's Association, and members of the Salinas and Carmel Fire Departments were present to tell of the work of their groups.

N. Y. to Hold Deputy Chief Examination

Promotional examinations to the rank of Deputy Chief are to be held by the New York Fire Department, November 15 and 16. The same candidates are to appear both days. Battalion Chiefs who by November 15 will have served at least six months in that rank, are eligible to take this examination.

Members of the Massachusetts State Firemen's Association, at their annual convention, passed a resolution calling for a firm stand against the cutting of salaries of firemen.



Fire Alarm Box in Service 63 Years

Chief Francis A. Sullivan of the Lawrence, Mass., Fire Department reports that he has nine Gamewell fire alarm boxes that have been giving good service for sixty-three years. They were installed in 1869 and the only attention given was the regular monthly inspection and an occasional oiling. The photograph shows one of these boxes open.

FALSE ALARMS

—Courtesy of College Humor

"Last one down is a nigger baby."

BUSINESS-GETTER

Close by to the fire house was a taxi stand. A fireman sweeping the sidewalk saw a pocket book lying on the floor of the open taxi. He called to the driver.

"Say, Jim, there's a purse lying on the floor of your car."

The taxi cab operator looked carefully around and then whispered. "Sometimes when business is bad I put it there and leave the door open. It's empty but you have no idea how many people will jump in for a short drive when they see it."

"A baby certainly does brighten up a home," said the newlywed as he snapped on the lights at 2 a.m. and marched to the cry of his Prince of Wails.

FOLLOWING RULES

Flaherty was carried out of the basement where he was subjected to large amounts of smoke. Among other things, he developed eye trouble, and he underwent medical care. One day he called at the doctor's office and after he had left, he remembered that he was somewhat shaky about instructions.

He returned and asked, "I say, I forgot to ask you about that eye lotion."

"What about it?" asked the doctor.

"Do I have to drop it in my eyes before or after meals?"

It's pretty hard to avoid the pitfalls of the Big City. The gas companies are out making new ones in the streets all the time.

AUDIBLE SIGN

He was an instructor of the old school—firm, a hard taskmaster and inclined to be very sarcastic. He had before him a class of rookies. To make sure that the lesson of the previous day was remembered, he questioned one of the men.

"Why don't you answer me?" asked the instructor.

"I did, sir. I shook my head."

"But you don't expect me to hear it rattle away up here, do you?"

A bathroom in a boarding house is decorated with the following sign: "Please clean tub after bathing LANDLADY."

NOTHING SAID

When MacGregor was promoted to Lieutenant, the boys of his company presented him with a beautiful meerschaum pipe. It was his custom when he had nothing to do, to recline back in his chair at home and smoke his pipe. But the pipe fell and broke, as pipes will.

The next day his wife asked their young son:

"What did your father say when he saw his broken pipe?"

"Shall I leave out the swear words, mother?"

"Certainly, my dear."

"Well, mother, he didn't say anything."

Making highways wider would simply mean that buses would expand in width in the same ratio.

GOOD ADVICE

Work faithfully for ten hours a day,
Don't worry.
Then, in time, you may
Become the Chief and
Work twelve hours a day
And have all the worry.

A HANDICAP

As the result of a fireworks explosion, to which he responded, he found that his hearing was impaired. He went to a doctor for a number of treatments and at the last visit, the ear specialist said:

"There you are, sir. My bill for improving your hearing comes to exactly $25."

The patient shook his head. "Did you speak, Doctor?" he asked. "If so, I didn't hear a word you said."

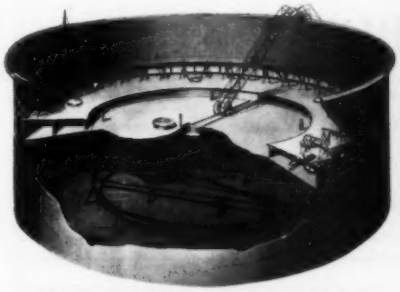
"Hm," sniffed the doctor, "perhaps I'd better make it $10."

"That's better," said the patient readily enough. "That's all right."

—Drawing by "Art" Espey

"Lookit Old Gloom-Face! Flunked the Lieutenant's exam. They asked whut wus ladder dogs and he answered the 'truck company mascots'."

WIGGINS
FLOATING ROOFS



Cut-away view showing construction of the Wiggins Floating Roof.

37,500-Bbl. gasoline tank equipped with a Wiggins Floating Roof.

Roof Proven Fire Safe

Exhaustive fire tests have proven that Wiggins Roofs prevent oil storage tank fires. This view shows gasoline being burned on roof without igniting contents of tank. The real proof of their fire protection qualities, however, is the fact that they have been in service all over the world under all conceivable conditions for nine years without a serious fire loss. Over 3,000 are in use.

Reduce the Fire Hazard in Oil Storage Tanks

The Wiggins Floating Roof rides directly on the liquid in an oil storage tank, completely blanketing the surface. There is no space for a hazardous air-vapor mixture to collect. The liquid itself cannot become ignited as the roof keeps the air from coming in contact with the oil. No vapor escapes into the air to form a fire hazard.

Where oil tank installations are being considered, they can be permitted without greatly increasing the fire hazard by requiring that such tanks be equipped with floating roofs. Our nearest office will be pleased to send you any specific information you may desire on the fire protection qualities of floating roofs.

CHICAGO BRIDGE & IRON WORKS

Chicago.....2486 Old Colony Bldg.
New York.....3178 Hudson Terminal Bldg.
Cleveland.....2256 Midland Bldg.
Birmingham.....1588 North 50th Street
Dallas.....1278 Burt Bldg.
San Francisco.....1072 Rialto Bldg.

also Boston, Philadelphia, Detroit, Tulsa, Houston, Los Angeles and Seattle.

Plants at BIRMINGHAM, CHICAGO and GREENVILLE, PA.

B-317

"FIRE"

An Unusual New Book

Written by One of the Country's Greatest Fire Fighting Authorities

THOS. F. DOUGHERTY

Assistant Chief, New York Fire Department

In Collaboration with PAUL W. KEARNEY

FORTY-THREE years' active experience taught Chief Dougherty a thing or two about fire fighting . . . he tells experiences in this book in a way that provides other progressive fire fighters with a wealth of helpful information.

He relates graphically the story of many sensational fires and reveals the inside facts which seldom reach the public. It is all written in a frank, interesting manner, providing thrilling reading and data of tremendous practical value.

This is a book no fire fighter can really afford to miss. If it doesn't give you more than your money's worth, we'll be greatly surprised.

A Few of the Chapters in "Fire"

EXPECT THE UNEXPECTED

"Get 'Em Young"—A pepper warehouse blaze—The ice plant fire—The dangers of dust—The menace of gasolene below grade—A fire started by water—Destroying a fireproof building.

HOW TO WIN A MEDAL

Three men in the blazing cellar—Gymnastics on a fourth-floor window sill—Working on a burning ladder—In the hold of a sulphur ship—Catching a falling body—Cheating the undertaker.

INSIDE A BURNING BUILDING

"Get inside"—Why firemen should know how to swim—Gas—Temperatures in a burning building—When necks blister and coats fall apart from the heat—Backdraught.

"I SMELL SMOKE"

Fire kills twenty civilians for every fireman—How to open a door in a burning building—Why they die before the flames reach them—The pitfalls of fire escapes—The invaluable Automatic Vent—Why a fire "mushrooms."

PANIC, THE BUTCHER

A human stampede—Fifty-two dead on their feet—The menace of the blocked stairway—If schools were as safe as factories—Open elevator shafts—We lack the courage to demand safety.

TRICKS OF THE TRADE

Minimum of damage—Why firemen smash glass—When it is cheap to rip open a roof—An $8,000,000 fire from radiation—The dangers of water—The fallacy of the "one spot delivery"—Climbing six stories in thirty-nine seconds.

$3.50 PER COPY Postpaid

Book Dept.
Case-Sheppard-Mann Pub. Corp.
24 W. 40th St., New York

Gentlemen: I am enclosing $..... money order (or check), for which please send me a copy of "Fire."

NAME.....

RANK.....

ADDRESS.....

TRIPLE COMBINATION 3 TONE
FEDERAL WHISTLE

A low pressure triple combination air whistle that will operate off of any existing fire alarm system. It has no equal for tone volume. No moving parts—nothing to get out of order. Guaranteed for 10,000 hours of continuous blowing. Get complete details and attractive price by writing for Bulletin 38.

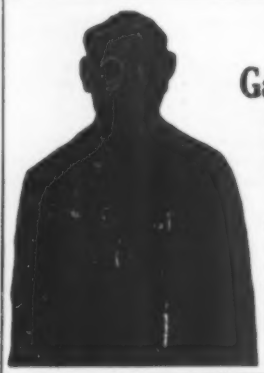
FEDERAL ELECTRIC COMPANY
8702 South State Street, Chicago, Illinois

If you want to give your town the best protection that money can buy, you can do it by specifying

BUFFALO
FIRE APPARATUS

Send for new catalog completely illustrating and describing this better fire apparatus

BUFFALO FIRE APPLIANCE CORP.
44 Central Avenue Buffalo, N. Y.



New Victor
Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

Over 5,000 Victor Gas Masks in Service

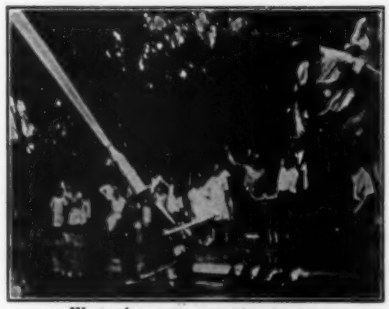
Full Line Fire Dept. Supplies and Equipment

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc.
156 Chambers St., New York
D. A. Woodhouse, Pres. and Gen. Mgr. George J. Kuss, Vice-Pres. and Treas.

THE NEW EASTMAN DELUGE GUN

is a portable turret pipe that can be used on the ground or mounted on the apparatus. This photo shows our three-way gun used on the ground, connected to two lines of hose. This gun may be furnished with either two-way, three-way or four-way Siamese, as desired.



Write for new general catalogue

SAMUEL EASTMAN COMPANY
Concord, N. H., U. S. A.

The FINEST LARGE NOZZLES *and* DECK GUNS are "Made by MORSE"

Practically every well known Fire Boat in service in this country today is equipped with MORSE "Invincible" Nozzles, many pieces of fire apparatus are also equipped with these exceptionally fine nozzles. They are the result of nearly a hundred years of experience in producing nozzles that are a lot better than the general run of fire nozzles.

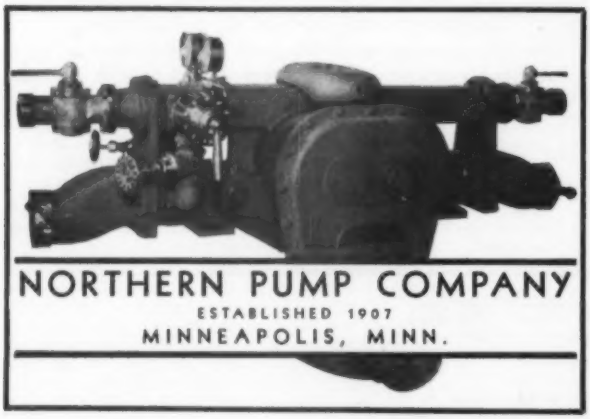
ANDREW J. MORSE & SON, INC.
221 High Street BOSTON, MASS.

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents



NORTHERN PUMP COMPANY
ESTABLISHED 1907
MINNEAPOLIS, MINN.

JOHN H. CLAY, INC.
1320 Ridge Ave., Philadelphia, Pa.
Established 1864

Clay Automatic Door Opening Devices for Fire Station Doors Opening either In or Out. Save valuable minutes in getting to fires. Send for Bulletin.

What Will You Have?

1 Acid Siphons
2 Adaptors for Changing Hydrant Threads
3 Acid Jars and Rings
4 Aerial Ladders, Detachable
5 Aerial Trucks
6 Alarms, Sirens, Electric
7 Alarm Systems, Industrial
8 Alarm Systems, Municipal Telegraphic
9 Alarms, Thermostatic
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11 Badges, Insignias, Buttons, etc.
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13 Battery Jars
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21 Building Materials, Fire Retardant
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23 Chains, Non-Skid, Fire Apparatus
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25 Chemical Engines and Tanks
26 Chimney Fire Fuses and Compounds
27 City Service Trucks
28 Coats and Suits, Firemen's Quick Hitch
29 Combination Chemical and Hose Cars
30 Cutting and Welding Equipment, Blow Torch
31 Cutting and Welding Equipment, Electric
32 Deluge Sets
33 Door Openers, Fire Station, Automatic
34 Electric Light Plants
35 Extinguishers, Calcium Chloride
36 Extinguishers, Carbon Dioxide
37 Extinguishers, Soda-Acid
38 Extinguishers, Carbon Tetrachloride
39 Extinguishers, Foam
40 Extinguishers, Powder
41 Fire Boat Nozzle Equipment
42 Fire Department Supplies, General
43 Fire Exit Devices, Door Opening
44 Fire Alarm Posts
45 Fire Escapes, Portable
46 Fire Escapes, Rigid
47 First Aid Equipment
48 Flare Lights
49 Flashlights, Hand
50 Flood Lighting Equipment
51 Foam Generating Apparatus
52 Foam Liquid for Extinguishers
53 Gas Masks and Respirators
54 Gas and Smoke Helmets
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56 Goggles, Firemen's
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62 Hose, Chemical
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68 Jacks for Fire Trucks
69 Jacks, Shoring and Prying
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72 Motorcycles, Fire Dept. Equipped
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75 Packings, Pump
76 Pads, Pole Hole
77 Paints, Fire Resisting
78 Priming Ether, Motor
79 Pumping Cars, Standard
80 Pumping Cars, Foam
81 Pumps, Fire Apparatus
82 Pumps, Fire Service, Stationary
83 Pumps, Portable for Fire Protection
84 Record Books, Fire
85 Relief Valves
86 Reviving Apparatus, Oxygen
87 Rubber Clothing
88 Salvage Covers
89 Searchlights
90 Shingles, Fire Retardant
91 Shirts, Firemen's Special
92 Sirens, Apparatus and Chiefs' Cars
93 Sliding Poles
94 Soda and Acid Chemicals
95 Spark Plugs, Fire Apparatus and Motorcycles
96 Squad and other Auxiliary Cars
97 Sprinkler Head Shut-Offs
98 Sprinkler Supervisory Service
99 Sprinkler Systems, Automatic, Foam
100 Sprinkler Systems, Automatic Water
101 Steam Fire Engines
102 Syphons, Water
103 Tarpaulins and Fire Blankets
104 Tetrachloride Chemicals
105 Thawing Equipment, Hydrant
106 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid
107 Tractors
108 Traffic Clearing Systems
109 Triple Combination Pumping Cars
110 Uniforms
111 Water Towers
112 Wheels, Cushion
113 Whistles, Fire Alarm, Compressed Air
114 Whistles, Fire Alarm, Steam
115 Whistles, Fire Apparatus
116 Wrecking Trucks

Here's a Tip!

Up-to-date information on modern fire-fighting equipment and supplies, as listed, may be obtained by:

1. *Looking over the list.*
2. *Jotting down the numbers on the coupon which indicates the equipment you wish literature on.*
3. *Filling in and mailing the coupon to us.*

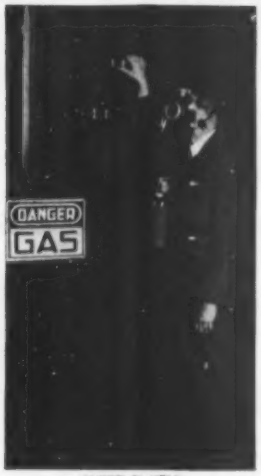
No obligation whatever! Such service is a pleasure! Here's a tip!

FIRE ENGINEERING, 24 West 40th St., New York City

As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Name.....
Position.....
Street.....
City and State.....
Nos.....
Nos.....
Nos.....

10-32



CHIEF SMITH

PROTECT Your Men

Richard Lee Smith, Chief of the Pittsburgh Fire Department and 250 members recently completed Gas Chamber Tests and Training in the Laboratories of the Mine Safety Appliances Company, wearing BURRELL ALL-SERVICE GAS MASKS of which the department has 139 in service.

These firemen entered High Concentrations of Poisonous Carbon Monoxide Gas, so frequently encountered in Fire Fighting, which would have been fatal in a few minutes time without the protection of BURRELL ALL-SERVICE MASKS!

Bulletin 49 Gives Full Details of This Mask
The Only Canister Mask That Gives Adequate Protection

Mine Safety Appliances Co.

Braddock, Thomas and Meade Sts., Pittsburgh, Pa.

DEPARTMENT DEMONSTRATIONS GLADLY ARRANGED

75% of the country's half-billion-dollar annual fire loss is traceable to WATER DAMAGE!

Those interested in reducing this enormous loss are beginning to realize the need for salvage work by the fire department, and are equipping their departments with

SHUREDRY WATERPROOFED SALVAGE COVERS

SHUREDRY covers are easy to handle and spread. Weigh less and cost less than rubber covers, and will not crack when left folded and stored in one position on the shelf.

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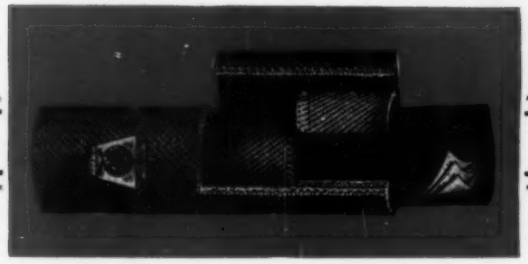

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